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"In adopting our title of the *Journal of Mental Science, published by authority of the Medico-Psychological Association*, we profess that we cultivate in our pages mental science of a particular kind, namely, such mental science as appertains to medical men who are engaged in the treatment of the insane. But it has been objected that the term mental science is inapplicable, and that the term mental physiology or mental pathology, or psychology, or psychiatry (a term much affected by our German brethren), would have been more correct and appropriate; and that, moreover, we do not deal in mental science, which is properly the sphere of the aspiring metaphysical intellect. If mental science is strictly synonymous with metaphysics, these objections are certainly valid; for although we do not eschew metaphysical discussion, the aim of this JOURNAL is certainly bent upon more attainable objects than the pursuit of those recondite inquiries which have occupied the most ambitious intellects from the time of Plato to the present, with so much labour and so little result. But while we admit that metaphysics may be called one department of mental science, we maintain that mental physiology and mental pathology are also mental science under a different aspect. While metaphysics may be called speculative mental science, mental physiology and pathology, with their vast range of inquiry into insanity, education, crime, and all things which tend to preserve mental health, or to produce mental disease, are not less questions of mental science in its practical, that is in its sociological point of view. If it were not unjust to high mathematics to compare it in any way with abstruse metaphysics, it would illustrate our meaning to say that our practical mental science would fairly bear the same relation to the mental science of the metaphysicians as applied mathematics bears to the pure science. In both instances the aim of the pure science is the attainment of abstract truth; its utility, however, frequently going no further than to serve as a gymnasium for the intellect. In both instances the mixed science aims at, and, to a certain extent, attains immediate practical results of the greatest utility to the welfare of mankind; we therefore maintain that our JOURNAL is not inaptly called the *Journal of Mental Science*, although the science may only attempt to deal with sociological and medical inquiries, relating either to the preservation of the health of the mind or to the amelioration or cure of its diseases; and although not soaring to the height of abstruse metaphysics, we only aim at such metaphysical knowledge as may be available to our purposes, as the mechanician uses the formularies of mathematics. This is our view of the kind of mental science which physicians engaged in the grave responsibility of caring for the mental health of their fellow-men may, in all modesty, pretend to cultivate; and while we cannot doubt that all additions to our certain knowledge in the speculative department of the science will be great gain, the necessities of duty and of danger must ever compel us to pursue that knowledge which is to be obtained in the practical departments of science with the earnestness of real workmen. The captain of a ship would be none the worse for being well acquainted with the higher branches of astronomical science, but it is the practical part of that science as it is applicable to navigation which he is compelled to study."—*Sir J. C. Bucknill, M.D., F.R.S.* (*Journ. Ment. Sci.*, vol. vii, 1861, p. 137).

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1927	Elizabeth Casson.	—
1928	F. R. Martin.	—
1929	A. Walk.	—

* Prize only.

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MEDALS AND PRIZES.

The Gaskell Gold Medal and Prize.

(Value not less than £30.)

This Medal and Prize was established, at the Annual Meeting held on August 9, 1886, in honour of Samuel Gaskell, Esq., F.R.C.S., at one time Medical Superintendent of the County Asylum, Lancaster, and afterwards for 17 years a Commissioner in Lunacy. Upon his death on March 16, 1886, his sister, Mrs. Holland, gave £1000 to the Association, and other members of the family contributed further sums amounting to £340. The interest of this sum is given annually as a prize to the candidate who most distinguishes himself in an Examination in the subjects hereunder mentioned.

The examination must be held in England according to the terms of the Trust.

(1) Candidates must produce evidence: (*a*) Of having attained the age of 23. (*b*) Of having been qualified Medical Officers in one or more mental hospitals or clinics in psychiatry in the United Kingdom or elsewhere in the British Empire for at least two years. (*c*) Of possessing the Certificate in Psychological Medicine of this Association or a degree or diploma in Psychological Medicine of one of the Universities or Examining Boards having the power to grant medical qualifications registrable in the British Isles or elsewhere in the British Empire.

(2) Candidates will be examined in: (*a*) Psychology. (*b*) Anatomy, Histology and Physiology of the Nervous System, reproductive and endocrine glands; Pathology of the above, especially in relation to mental disorders. (*c*) The diagnosis, prognosis, treatment and legal relations of mental disorders. (*d*) Clinical cases.

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The Bronze Medal and Prize.

(Value Ten Guineas.)

The Bronze Medal and Prize was established at the Annual Meeting held on August 2, 1882, and is awarded to any assistant medical officer of any mental hospital (public or private) for the best dissertation on any clinical or pathological subject relating to mental disorders.

The following is an abstract of the conditions:

(1) The dissertation to be written in English.

(2) Each dissertation to be distinguished by a motto or device, and accompanied by a sealed envelope containing the name and residence of the author, and having on the outside a motto or device corresponding with that on the dissertation.

(3) The dissertation shall not exceed 10,000 words in length.

(4) The dissertation and every accompanying drawing and preparation will become the property of the Association, to be published in the Journal at the discretion of the Editors.

(5) The dissertations not approved, with their accompanying drawings and preparations, will, upon application within one year, be returned, together with the sealed envelopes unopened.

(6) The dissertations not approved, with the accompanying drawings and preparations if not claimed within one year will become the property of the Association.

(7) The dissertations for the year must be delivered to the Registrar before April 30.

(8) No prize will be awarded if none of the dissertations is of sufficient merit.

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Divisional Prizes for Assistant Medical Officers.

(Two Prizes of £10 and £5 respectively.)

The proposal to award Divisional Prizes under the conditions set out below emanated from the Irish Division and was adopted at the Annual Meeting held on July 13, 1911.

(1) Two prizes of £10 and £5 respectively will be awarded annually by the Association (provided sufficient merit be shown) for the best paper read during the preceding calendar year at a Divisional Meeting by an Assistant Medical Officer or Assistant Physician in a Psychiatric or Neurological Institution or Service. *(See also Regulation, No. 7.)*

(2) Competitors must be members of the Association.

(3) Only one paper by a competitor can be entered during any competitive year. The same applies to a paper entered by more than one author.*

(4) Only papers certified by the Secretary of the Division (in the absence of the Secretary, the Chairman of the Meeting) to have been read at a meeting of the Division and to be eligible for this competition can be entered. Divisional Secretaries are to withhold their certificates in cases where there has occurred material alterations or additions.

(5) Papers certified as eligible for the competition shall be forwarded to the Registrar not later than April 30 of the following year. They shall be submitted to the Examiners for the Certificate in Psychological Medicine for report and then adjudicated on by the President. Publication shall not invalidate a paper for adjudication.†

(6) The results shall be announced, and the prizes awarded, if any, by the President at the Annual Meeting in the year following the competitive year.

(7) Papers by more than one author can be entered and any prize awarded be divided among the authors.

(8) If in any competitive year one or two papers only are submitted for competition the Council may withhold either or both prizes; or it may, after considering the report of the Adjudicator, and if in its opinion the paper or papers are of outstanding merit, award a first or second or both prizes, at its discretion.

THE CERTIFICATE IN PSYCHOLOGICAL MEDICINE.

This Certificate was founded at the Annual Meeting held on August 4, 1885, and the first examinations were held in 1886.

Candidates must be at least twenty-one years of age, and must produce a certificate of having at least three months' clinical experience of mental disorders, or of having attended a course of lectures on insanity and the practice of a mental hospital (where there is clinical teaching) for a like period, or they shall give such proof of experience in mental disorders as shall, in the opinion of the President, be sufficient.

The examination is held yearly, and is in three parts: (1) Written. (2) Oral. (3) Practical.

Candidates must be registered under the Medical Act (1858) before the certificate is bestowed.

The fee for the examination is £3 3s., and intending candidates should communicate with the Registrar who will supply date and place of examination.

Candidates failing in the examination may present themselves at the next or subsequent examinations on payment of a fee of £1 1s.

* This means that the joint authors (though separately eligible) cannot enter another paper in the competitive year.

† The original MS., certified in accordance with Regulation No. 4, is to be submitted. Only under exceptional circumstances can a certified reprint of a published paper be accepted, but a reprint, where possible, should accompany the certified original MS.

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THE INSIGNIA OF THE NURSING CERTIFICATE.

The Certificate of Proficiency in Mental Nursing was founded at the Annual Meeting held on July 24, 1890.

The Nursing Medal.

The Nursing Badge.

The Nursing Badge was founded at the Annual Meeting held on July 11, 1928.

HONORARY CERTIFICATE IN MENTAL NURSING.

1928. H.R.H. Princess Mary, Viscountess Lascelles, D.B.E.

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LIST OF CHAIRMEN.

1841. Dr. Blake, Nottingham General Asylum.
1842. Dr. de Vitré, Lancaster Asylum.
1843. Dr. Conolly, Hanwell Asylum.
1844. Dr. Thurnam, The Retreat.
1847. Dr. Wintle, Warneford House.
1848. William Ley, M.R.C.S., Littlemore Asylum.
1851. Dr. Conolly, Hanwell Asylum.
1852. Dr. Wintle, Warneford House.

LIST OF PRESIDENTS.

1854. A. J. Sutherland, M.D., St. Luke's Hospital, London.
1855. J. Thurnam, M.D., Wilts County Asylum.
1856. J. Hitchman, M.D., Derby County Asylum.
1857. Forbes Winslow, M.D., Sussex House, Hammersmith.
1858. John Conolly, M.D., Hanwell Asylum.
1859. Sir Charles Hastings, D.C.L., Worcester.
1860. J. C. Bucknill, M.D., Devon County Asylum.
1861. Joseph Lalor, M.D., Richmond Asylum, Dublin.
1862. John Kirkman, M.D., Suffolk County Asylum.
1863. David Skae, M.D., Royal Asylum, Edinburgh.
1864. Henry Munro, M.D., Brook House.
1865. Wm. Wood, M.D., Kensington House.
1866. W. A. F. Browne, M.D., Commissioner in Lunacy for Scotland.
1867. C. A. Lockhart Robertson, M.D., Haywards Heath Asylum.
1868. W. H. O. Sankey, M.D., Sandywell Park, Cheltenham.
1869. T. Laycock, M.D., Edinburgh.
1870. Robert Boyd, M.D., Wells Asylum.
1871. Henry Maudsley, M.D., The Lawn, Hanwell.
1872. Sir James Coxe, M.D., Commissioner in Lunacy for Scotland.
1873. Harrington Tuke, M.D., Chiswick House.
1874. T. L. Rogers, M.D., Rainhill Asylum.
1875. J. F. Duncan, M.D., Dublin.
1876. W. H. Parsey, M.D., Warwick County Asylum.
1877. G. Fielding Blandford, M.D., London.
1878. Sir J. Crichton-Browne, M.D., Lord Chancellor's Visitor in Lunacy.
1879. J. A. Lush, M.D., Fisherton House.
1880. G. W. Mould, M.R.C.S., Royal Asylum, Cheadle.
1881. D. Hack Tuke, M.D., London.
1882. Sir W. T. Gairdner, M.D., Glasgow.
1883. W. Orange, M.D., State Criminal Lunatic Asylum, Broadmoor.
1884. Henry Rayner, M.D., Hanwell Asylum.
1885. J. A. Eames, M.D., District Asylum, Cork.
1886. Sir Geo. H. Savage, M.D., Bethlem Royal Hospital.
1887. Sir Fred. Needham, M.D., Barnwood House
1888. Sir T. S. Clouston, M.D., Royal Asylum, Edinburgh.
1889. H. Hayes Newington, F.R.C.P., Ticehurst House.
1890. David Yellowlees, M.D., Royal Asylum, Glasgow.
1891. E. B. Whitcombe, M.R.C.S., City Asylum, Birmingham.
1892. Robert Baker, M.D., The Retreat.
1893. J. Murray Lindsay, M.D., Derby County Asylum.
1894. Conolly Norman, F.R.C.P.I., Richmond Asylum, Dublin.
1895. David Nicolson, *C.B.*, M.D., State Criminal Lunatic Asylum, Broadmoor.
1896. William Julius Mickle, M.D., Grove Hall.
1897. Thomas W. McDowall, M.D., Northumberland Asylum.
1898. A. R. Urquhart, M.D., James Murray's Royal Asylum, Perth.

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1899. J. B. Spence, *O.B.E.*, M.D., Burntwood Asylum, Lichfield.
1900. Fletcher Beach, M.B., London.
1901. Oscar T. Woods, M.D., District Asylum, Cork.
1902. J. Wiglesworth, M.D., Rainhill Asylum.
1903. Ernest W. White, *C.B.E.*, M.B., City of London Asylum, Stone.
1904. R. Percy Smith, M.D., London.
1905. T. Outterson Wood, M.D., London.
1906. Sir Robert Armstrong-Jones, *C.B.E.*, M.D., Claybury Asylum.
1907. P. W. MacDonald, M.D., Dorchester County Asylum.
1908. Chas. A. Mercier, M.D., Flower House.
1909. W. Bevan-Lewis, M.Sc., West Riding Asylum, Wakefield.
1910. Sir John Macpherson, M.D., Commissioner in Lunacy for Scotland.
1911. Wm. R. Dawson, *O.B.E.*, M.D., Inspector of Lunatic Asylums, Dublin.
1912. J. Greig Soutar, M.B., Barnwood House.
1913. James Chambers, M.D., The Priory.
1914–18. David G. Thomson, *C.B.E.*, M.D., Norfolk County Asylum.
1918. John Keay, *C.B.E.*, M.D., Bangour Village.
1919. Bedford Pierce, M.D., The Retreat.
1920. William F. Menzies, M.D., Cheddleton Mental Hospital.
1921. C. Hubert Bond, *C.B.E.*, M.D., Commissioner, Board of Control.
1922. G. M. Robertson, M.D., Royal Mental Hospital, Morningside, Edinburgh.
1923. Edwin Goodall, *C.B.E.*, M.D., Cardiff City Mental Hospital.
1924. Michael J. Nolan, L.R.C.P.&S.Irel., Downpatrick Asylum.
1925. Sir Frederick W. Mott, *K.B.E.*, M.D., London.
1926. John R. Lord, *C.B.E.*, M.D., Horton Mental Hospital, Epsom.
1927. Hamilton Marr, M.D., Commissioner, General Board of Control for Scotland.
1928. J. Shaw Bolton, D.Sc., M.D., West Riding Mental Hospital, Wakefield.
1929. Nathan Raw, *C.M.G.*, M.D., F.R.C.S.E., F.R.S.E., Lord Chancellor's Visitor in Lunacy.

LIST OF MAUDSLEY LECTURERS.

1920. Sir J. Crichton-Browne, LL.D., D.Sc., M.D., F.R.S.
1921. Sir F. W. Mott, *K.B.E.*, LL.D., M.D., F.R.C.P., F.R.S.
1922. Sir M. Craig, *C.B.E.*, M.A., M.D., F.R.C.P.
1923. Charles Kirk Clarke, LL.D., M.D.
1924. J. Carswell, F.R.F.P.S.
1925. Joseph Shaw Bolton, D.Sc., M.D., F.R.C.P.
1926. George M. Robertson, M.D., F.R.C.P.E., F.R.C.S.E.
1927. Edwin Goodall, *C.B.E.*, M.D., F.R.C.P.
1928. Sir John Macpherson, *C.B.*, M.D., F.R.C.P.E.
1929. Charles E. Spearman, Ph.D., F.R.S.
1930. Sir Henry Alfred McCardie.

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HONORARY MEMBERS.

1900. Blumer, G. Alder, M.D., L.R.C.P.Edin., Superintendent, Emeritus Butler Hospital; 196, Blackstone Boulevard, Providence, R.I., U.S.A. (*Ord. Mem.*, 1890.)

1928. Bond, Sir Hubert, *K.B.E.*, LL.B., D.Sc., M.D., C.M.Edin., F.R.C.P. Lond., M.P.C., Commissioner, Board of Control, Caxton House West, Westminster, S.W. 1. (*General Secretary*, 1906–12.) (PRESIDENT, 1921–22.) (Emeritus Lect. on Psychiat., Middlx. Hosp.) (*Ord. Mem.* 1892).

1900. Bresler, Johannes, Sanitätsrat Dr., Director of the Provincial Mental Hospital, Kreuzburg, Oberschlesien, Germany. (Editor of the *Psychiatrisch-neurologische Wochenschrift.*) (*Corr. Mem.*, 1896.)

1928. Bleuler, Eugen, Prof. Dr., Zollikerstrasse 98, Zollikon bei Zürich, Switzerland.

1902. Brush, Edward N., M.D., Superintendent-Emeritus, Sheppard and Enoch Pratt Hospital, Towson, Maryland; Hamilton Road, Mount Washington, Baltimore, Md., U.S.A.

1925. Chamberlain, Rt. Hon. Arthur Neville, *M.P.*, 37, Eaton Square, London, S.W. 1.

1920. Colin, Dr. H., Secrétaire Général de la Société Médico-Psychologique de Paris; 35, Grande Rue, Châtenay (Seine), France.

1909. Collins, Sir Wm. Job, *K.C.V.O.*, B.Sc., M.D., M.S., F.R.C.S., 1, Albert Terrace, Regent's Park, London, N.W. 1.

1912. Considine, Thomas Ivory, L.R.C.P., F.R.C.S.Irel., Medical Superintendent, Central Criminal Asylum, Dundrum, co. Dublin.

1918. Cooke, Sir (Edward) Marriott, *K.B.E.*, M.B., Honorary Commissioner, Board of Control; 9, Colherne Court, South Kensington, S.W. 5. (*Ord. Mem.*, 1878.)

1902. Coupland, Sidney, M.D., F.R.C.P., Wootton Ridge, Boar's Hill, Oxford.

1876. Crichton-Browne, Sir J., LL.D., D.Sc., M.D.Edin., F.R.S., 45, Hans Place, London, S.W. 1. (PRESIDENT, 1878.) (*Ord. Mem.*, 1863.)

1924. Dawson, Lt.-Col. W. R., *O.B.E.*, B.A., M.D., B.Ch.Dubl., F.R.C.P.Irel., D.P.H., M.P.C., Chief Medical Officer, Ministry of Home Affairs, Northern Ireland, 26, Windsor Park, Belfast. (*Co Editor*, 1920–21.) (PRESIDENT, 1911–12.) (*Ord. Mem.*, 1894.)

1925. Drummond, Sir David, *C.B.E.*, M.A., D.C.L., M.D., *J.P.*, 6, Saville Place, Newcastle-on-Tyne.

1923. Ellis, Henry Havelock, L.S.A., 24, Holmdene Avenue, Herne Hill, S.E. 24.

1922. l'Hermitte, Dr. Jacques Jean, Médecin de l'Hospice Paul Brousse, Paris; 9, rue Marbeuf, Paris (VIII[e]), France.

1924. McDougall, William, LL.D., M.B., F.R.S., Professor of Psychology in Duke University, Durham, North Carolina, U.S.A.

1928. Macmillan, Rt. Hon. Hugh, LL.D., K.C., 20, Abingdon Street, Westminster, S.W. 1.

1910. Macpherson, Sir John, *C.B.*, M.D., C.M., F.R.C.P.Edin., "Hillside," Cleeve, nr. Bristol. (*Ord. Mem.*, 1886.) (PRESIDENT, 1910–11.)

1921. Maudsley, Sir Henry Carr, *K.C.M.G.*, *C.B.E.*, M.D., B.S., F.R.C.P., Consulting Physician, Melbourne Hospital, Victoria; 8, Collins Street, Melbourne.

1926. Meyer, Adolf, M.D., Psychiatrist in Chief, The Johns Hopkins Hospital, Baltimore, Md., U.S.A.

1922. Pactet, Dr. François Florentine, Médecin en chef de l'Asile de Villejuif; 94, Avenue de la République, Villejuif, Seine, France.

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1929. Pavlov, Ivan Petrovitch, M.D., Member of the Russian Academy of Sciences, Director of the Physiological Laboratories, Institute of Experimental Medicine and Academy of Science, Leningrad.

1927. Robertson, George Matthew, M.D., C.M., F.R.C.P.Edin., Hon. F.R.C.S. Edin., M.P.C., Professor of Psychiatry, University of Edinburgh; Tipperlinn House, Morningside Place, Edinburgh. (*Ord. Mem.*, 1887.) (*Vice-Chairman, Research and Clinical Committee since* 1927.) (PRESIDENT, 1922–23.)

1927. Rolleston, Sir Humphry Davy, *Bt.*, *K.C.B.*, D.C.L., LL.D., D.Sc., M.D., F.R.C.P., Physician in Ordinary to H.M. the King; Regius Professor of Physic, University of Cambridge; Southfield, Trumpington Road, Cambridge.

1923. Rose, Lt.-Col. Sir Arthur, *D.S.O.*, Chairman, General Board of Control for Scotland, 25, Palmerston Place, Edinburgh.

1924. Sandhurst, Rt. Hon. Lord, Barrister-at-Law; Lord Chancellor's Visitor in Lunacy; Edgebrook, Sheringham, Norfolk.

1911. Semelaigne, Dr. Réné, Secrétaire des Séances de la Société Medico-Psychologique de Paris, 59, Boulevard de Montmorency, Paris (XVI^{e}), France. (*Corr. Mem.*, 1893.)

1929. Sherrington, Sir Charles Scott, *O.M.*, *G.B.E.*, M.A., LL.D., D.Sc., M.D., F.R.C.P., F.R.C.S., F.R.S., Waynflete Professor of Physiology, Oxford; 9, Chadlington Road, Oxford.

1927. Smith, Robert Percy, M.D., B.S.Lond., F.R.C.P.; 36, Queen Anne Street, London, W. 1. (*Ord. Mem.*, 1885.) (*General Secretary*, 1896–97.) (*Chairman Educational Committee*, 1899–1903.) (PRESIDENT, 1904–05.)

1922. Smith, William Charles Clifford, Esq., *O.B.E.*, F.R.I.B.A., M.I.C.E., *J.P.*, Dudley Lodge, Wallington, Surrey.

1929. Tanzi, Eugenie, M.D., Professor of Psychiatry, Direttore, Clinica Psichiatrica di S. Salvi, Firenze, Italy.

1901. Toulouse, Dr. Edouard, Médecin des Asiles de la Seine; 1, Rue Cabanis, Paris (XIV^{e}), France.

1923. Willis, Sir Frederick James, *K.B.E.*, *C.B.*, Church House, Bramley, Guildford.

1926. Winkler, C., M.D., 35, Heerenstraat, Utrecht, Holland. (*Corr. Mem.*, 1924.)

CORRESPONDING MEMBERS.

1928. Bliss, Malcolm Andrews, M.D., Consultant in Neuro-Psychiatry, St. Luke's Hospital; 301, Himboldt Buildings, St. Louis, Minn., U.S.A.

1911. Boedeker, Geheimer Sanitätsrat, Prof. Justus Karl Edmund, Director, Zehlenhof Asylum; Margareten Strasse, 8, Berlin.

1929. Bouman, K. Herman, M.D., Professor of Psychiatry and Director of the University Psychiatric Clinic, Jan Luykenstraat 24, Amsterdam.

1923. Briggs, L. Vernon, M.D., 64, Beacon Street, Boston, Mass., U.S.A.

1929. Buscaino, V. M., M.D., Professor of Psychiatry, University of Catania, Sicily.

1897. Buschan, Sanitätsrat Dr. med et phil G., Friedrich Carlstrasse 7, Stettin, Germany.

1927. Charpentier, René, M.D., Secrétaire Permanent, Congrès des Médecins Aliénistes et Neurologistes de France et des Pays de langue française; 119, rue Perrouet, Neuilly s/Seine (Seine), France.

1904. Coroleŭ, Wilfrid, Medico forense del distrito de la Barceloneta, Aribau, 31, Barcelona, Spain.

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1924. Cotton, Henry A., A.M., M.D., Medical Director, State Hospital, Trenton, New Jersey, U.S.A.
1896. Cowan, F. M., M.D., 109, Perponcher Straat, The Hague, Holland.
1929. Ebaugh, Franklin G., A.B., M.D., Professor of Psychiatry, University of Colorado; Director, Colorado Psychiatric Hospital, University of Colorado School of Medicine Hospitals; 4200, East Ninth Avenue, Denver, Colorado, U.S.A.
1911. Falkenberg, Sanitätsrat, Dr. Wilhelm, Direktor der Berliner Torenanstalt, Herzberge, Berlin-Lichtenberg.
1907. Ferrari, Giulio Cesare, M.D., Director, Manicomio Provinciale, Imola, Bologna, Italy.
1911. Friedländer, Prof. Dr. Adolf Albrecht, Haus Sonnblick, Littenweiler, bei Freiburg i/Baden, Germany.
1901. Gommès, Dr. Marcel, 5, Rue Parrot, Paris (XII[e]).
1928. Kappers, C. O. Ariens, M.D., Director, Dutch Central Institution for Brain Research, Amsterdam.
1928. Kirby, George H., LL.D., M.D., Professor of Psychiatry, Columbia University; Director, Psychiatric Institute, New York City, U.S.A.
1922. Kure, Prof. Schuzo, Tokyo University, Japan.
1909. Moreira, Prof. Dr. Juliano, Directeur General de l'Assistance aux Aliénés; Praia da Saudade 288, Rio de Janeiro, Brazil.
1922. Morowoka, Dr. T., Owada, 102, Shibuya, Tokyo, Japan.
1929. Pameijer, J. H., M.D., Director, Maasoord (City of Rotterdam) Mental Hospital, Poortugaal.
1928. Pighini, Giacomo, M.D., Professor of Psychiatry and Director, Laboratori Scientifici Instituto Psichiatrico di S. Lazzaro, S. Maurizio, Reggio Emilia, Via De Amicis 10, Italy.
1909. Pilcz, Prof. Dr. Alexander, VIII/2 Alserstrasse 43, Vienna, Austria.
1929. Pratt, G. K., M.D., Assistant Medical Director, National Committee for Mental Hygiene; 370, Seventh Avenue, New York, U.S.A.
1922. Sano, Dr., Directeur de la Colonie de Gheel, Belgium.
1929. Scheer, W. M. van der, M.D., Director, Santpoort (Province of North Holland) Mental Hospital, Meerenberg.
1929. Stuurman, F. J., M.D., Secretary, Dutch Association for Psychiatry and Neurology; Oegstgeest, near Leyden, Holland.
1927. Targowla, René, M.D., *Chev. Leg. Hon.*, 169, Rue de L'Universitie VII[e], Invalides 14–04, Paris.
1929. Thom, Douglas A., M.D., Professor of Mental Hygiene, Tuft Medical School; 520, Commonwealth Avenue, Boston, Mass., U.S.A.
1929. Wiersma, E. D., Professor of Psychiatry and Director of the University Psychiatric Clinic, Groningen.
1928. Wimmer August, M.D., Professor of Psychiatry, University of Copenhagen, Denmark.

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ORDINARY MEMBERS OF THE ASSOCIATION.

Alphabetical List of Ordinary Members of the Association on January 1, 1930, with the year in which they joined.

1928. Abd-el-Hakeem, Mohammed, M.B., B.Ch.Cairo, D.P.M., Assistant Medical Officer, Mental Hospital, Khanka, Egpyt.

1910. **Adam, George Henry, M.R.C.S., L.R.C.P.Lond., Resident Physician, Malling Place, West Malling, Kent.**

1919. **Adey, J. K., M.B., C.M.Melb., Sunbury, Victoria, Australia.**

1886. **Agar, Samuel Hollingsworth, jun., B.A.Camb., L.S.A., M.R.C.S.Eng., Hurst House, Henley-in-Arden.**

1923. Ahern, John Maurice, M.B., B.Ch.R.U.I., L.R.C.P.&S.Irel., 17, Walton Road, Liverpool.

1923. Ainsworth, Cyrus Gerald, M.A., LL.B., M.B., B.Ch.Camb., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Graylingwell Mental Hospital, Chichester.

1926. Albiston, Norman Arthur, M.B., B.S.Syd., D.P.M., 32, Darling Road, East Malvern, Victoria, Australia.

1924. **Alexander, Douglas Reid, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, London County Mental Hospital, Bexley, Kent.**

1899. **Alexander, Hugh de Maine, M.D., C.M.Edin., Medical Superintendent, Kingseat Mental Hospital, Newmachar, Aberdeen.**

1928. Alexander, James William MacGregor, M.B., Ch.B.Glasg., Assistant Medical Officer, City Mental Hospital, Mapperley Hill, Nottingham.

1899. **Allman, Dorah Elizabeth, M.B., B.Ch.R.U.I., Assistant Medical Officer, District Asylum, Armagh.**

1929. Anderson, John Colquhoun, B.Sc., M.B., Ch.B.Glasg., Dipl. Psych., Senior Medical Officer, Royal Asylum, Montrose; "Sunnyside," Montrose, Scotland.

1926. Anderson, John Ford, M.D., C.M.Aberd., M.R.C.P.Lond., L.R.C.S. Edin., 54, Finchley Road, London N.W. 8.

1898. **Anderson, John Sewell, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, City Mental Hospital, Willerby, Hull.**

1918. Anderson, William Kirkpatrick, M.D., Ch.B., F.R.F.P.S.Glasg., 2, Woodside Crescent, Glasgow. (Lect. on Ment. Dis., Andr. Coll., Glasg.)

1912. **Annandale, James Scott, M.B., Ch.B.Aberd., D.P.M., Senior Assistant** Physician, Royal Mental Hospital, Aberdeen.

1904. **Archdale, Mervyn Alex., M.B., B.S.Durh., D.P.M., Medical Superintendent, Sunderland Mental Hospital, Ryhope.**

1905. Archdall, Mervyn Thomas, L.S.A., L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., St. Denys, New Milton, Hants.

1882. Armstrong-Jones, Sir Robert, *C.B.E.*, D.Sc.Wales, M.D., B.S., F.R.C.P. Lond., F.R.C.S.Eng., F.S.A., *D.L.*, *J.P.*, Lord Chancellor's Visitor-in-Lunacy, 9, Bramham Gardens, London, S.W. 5 (and Plâs Dinas, Carnarvon, North Wales). (*Gen. Secretary*, 1897–1906.) (PRESIDENT, 1906–7.) (Gresham Prof. of Physic.)

1927. Atkin, Isaac, M.D., M.R.C.S., L.R.C.P.Lond., D.P.M., Junior Resident Medical Officer, Hants County Mental Hospital, Knowle, Fareham.

1910. Auden, George Augustus, M.A., M.D., B.Ch.Camb., Ph.D.Birm., F.R.C.P.Lond., D.P.H., F.S.A., School Medical Officer, Education Office, Council House, Margaret Street, Birmingham.

1891. Aveline, Henry Talbot Sydney, M.D.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C., Medical Superintendent, Somerset and Bath County Mental Hospital, Cotford, nr. Taunton. (*Secretary, S.W. Division*, 1905–11.)

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1922. Back, Frederick, M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Sunderland Mental Hospital, Ryhope.

1926. Bailey, Josiah Reginald, M.B., Ch.B.Glasg., Assistant Physician, Bangour Village, Uphall, West Lothian.

1909. Bain, John, M.A., M.B., Ch.B.Glasg., Medical Superintendent, Derby Borough Mental Hospital, Rowditch.

1913. Bainbridge, Charles Frederick, M.B., Ch.B.Edin., Assistant Medical Officer, Devon County Mental Hospital, Exminster.

1906. Baird, Harvey, M.D., Ch.B.Edin., Medical Superintendent, Periteau House, Winchelsea, Sussex.

1922. Banbury, Percy, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, West Park Mental Hospital, Epsom.

1922. Barclay, Rachel Mary, M.A., LL.B., M.D.Edin., Dipl. Psych., 2, W. Crosscauseway, Edinburgh.

1904. Barham, Guy Foster, M.A., M.D., B.Ch.Camb., M.R.C.S., L.R.C.P. Lond., Medical Superintendent, Claybury Mental Hospital, Woodford Bridge, Essex.

1919. Barkas, Mary Rushton, M.Sc.N.Z., M.D., B.S., M.R.C.S., L.R.C.P. Lond., D.P.M., Medical Superintendent, The Lawn, Lincoln.

1927. Barkas, Thomas Cook, *O.B.E.*, M.B., B.S.Durh., Resident Medical Officer, Middleton Hall, Middleton St. George, co. Durham.

1923. Barnes, Francis Gregory Lawson, M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Ewell Colony, Epsom.

1910. Bartlett, George Norton, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Derby County Mental Hospital, Mickleover. (*Secretary, S.W. Division*, 1916–22.)

1901. Baskin, J. Lougheed, M.D.Brux., L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Bagliffe, Bagley Wood, Kennington, Berks.

1902. Baugh, Leonard Dieckmann Hamilton, M.B., Ch.B.Edin., The Pleasaunce, York.

1892. Beadles, Cecil F., M.R.C.S., L.R.C.P.Lond., Gresham House, Egham Hill, Egham, Surrey.

1921. Beaton, Thomas, *O.B.E.*, M.D., B.S., M.R.C.S., F.R.C.P.Lond., Medical Superintendent, City Mental Hospital, Milton, Portsmouth. (*Assistant Editor, 1926–27, and Co-Editor of Journal since 1927.*) (Lect. on Ment. Dis., Bethlem Royal Hosp.)

1913. Bedford, Percy William Page, M.D., Ch.B.Edin., Dipl. Psych., Medical Superintendent, Dorset County Mental Hospital, Herrison, near Dorchester.

1909. Beeley, Arthur, M.Sc.Leeds, M.D., B.S., M.R.C.S., L.R.C.P.Lond., D.P.H., Assistant Medical Officer of Health, East Sussex; Windybank, King Henry's Road, Lewes, Sussex.

1922. Bell, Andrew Allan, M.B., Ch.B., F.R.F.P.S.Glasg., D.P.M., Pathologist and Assistant Medical Officer, Govan District Asylum, Hawkhead, Cardonald, N.B.

1914. Bennett, James Wodderspoon, M.R.C.S., L.R.C.P.Lond., The Old Manor, Salisbury.

1914. Benson, John Robinson, L.R.C.P.Lond., F.R.C.S.Eng., Resident Physician, Fiddington House, Market Lavington, Wilts, and Laverstock House, Salisbury.

1899. Beresford, Edwyn Henry, M.R.C.S., L.R.C.P.Lond., 20, Campion Road, Putney, London, S.W. 15.

1922. Berkeley-Hill, Owen Alfred Rowland, M.A., M.D., B.Ch.Oxon., M.R.C.S., L.R.C.P.Lond., Lt.-Col. *I.M.S.*, Medical Superintendent, Ranchi Mental Hospital for Europeans, Kanké, Bihar and Orissa, India.

1912. Berncastle, Herbert Melbourne, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Croydon Mental Hospital, Upper Warlingham, Surrey.

1927. Berry, Richard James Arthur, M.D.Edin. & Melb., F.R.C.S., F.R.S. Edin., "Rufford," Canford Lane, Westbury-on-Trym, Bristol.

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1920. Birch, William Somerset, *M.C.*, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, The Mental Hospital, Bridgetown; "Rosemont," Bridgetown, British West Indies.

1894. Blachford, James Vincent, *C.B.E.*, M.D., B.S.Durh., M.R.C.S., L.R.C.P. Lond., M.P.C., Milverton House, Long Ashton, Somerset.

1898. Blair, David, M.A., M.D., C.M.Glasg., Medical Superintendent, Lancashire County Mental Hospital, Prestwich, Manchester. (Lect. on Ment. Dis., Univ. of Manchester.)

1919. Blake, Stanley, L.R.C.P.&S.Irel., Assistant Medical Officer, Grangegorman Mental Hospital, Dublin.

1918. Blandford, Walter Folliott, B.A.Camb., M.R.C.S., L.R.C.P.Lond., Devonshire Club, London, S.W. 1.

1900. Bolton, Joseph Shaw, D.Sc., M.D., B.S., F.R.C.P.Lond., Medical Director, West Riding Mental Hospital, Wakefield. (Prof. of Ment. Dis., Univ. of Leeds.) (PRESIDENT, 1928-29.)

1922. Bostock, John, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Lauriston, Wickham Terrace, Brisbane, Queensland, Australia.

1918. Bower, Cedric William, L.M.S.S.A., Physician-Superintendent, Springfield House, near Bedford.

1917. Bowie, Edgar Ormond, L.A.H.Dubl., D.P.H., Assistant Medical Officer of Health; 14, Highfield Road, Doncaster.

1926. Boyd, William, M.B., Ch.B.Edin., D.P.H., D.P.M., Medical Superintendent, Fife and Kinross District Asylum, Cupar, Fife.

1898. Boyle, A. Helen A., M.D.Brux., L.R.C.P.&S.Edin., 9, The Drive, Hove, Sussex.

1928. Boyle, Eric Patrick, M.B., Ch.B.,Edin. Assistant Medical Officer, Brookwood Mental Hospital, Knaphill, Woking.

1926. Braithwaite, Joseph, M.B., Ch.B.Edin., D.P.M., Assistant Medical Officer, City Mental Hospital, Newcastle-on-Tyne.

1922. Bramwell, Edwin, M.D., F.R.C.P.Edin. & Lond., F.R.S.Edin., 23, Drumsheugh Gardens, Edinburgh. (Physician, Royal Infirmary, and Prof. of Clin. Med., Univ. of Edin.)

1911. Brander, John, M.D.. Ch.B.Edin., M.R.C.P.Lond., D.P.M., Medical Superintendent, Colney Hatch Mental Hospital, New Southgate, N.11.

1925. Brennan, Richard Dominick, M.B., B.Ch.N.U.I., Assistant Medical Officer, District Mental Hospital, Waterford.

1922. Brock, Arthur John, M.D., Ch.B.Edin., Medical Superintendent, Garth Hill House, North Queensferry, Fife.

1924. Brown, Basil William, M.B., B.S.Lond., L.M.S.S.A., D.P.M., The Priory, Roehampton, London, S.W. 15.

1924. Brown, George, M.B., B.Ch.Glasg., D.P.M., Assistant Medical Officer, Fountain Mental Hospital, Tooting Grove, S.W. 17.

1905. Brown, Harry Egerton, *O.B.E.*, M.D., Ch.B.Glasg., M.P.C., Physician-Superintendent, Mental Hospital, Pietermaritzburg, Natal.

1908. Brown, Robert Dods, M.D., Ch.B., F.R.C.P.Edin., D.P.H., Dipl. Psych., Medical Superintendent, Royal Mental Hospital, Aberdeen.

1912. Brown, William, M.D., C.M.Glasg., M.P.C., Medical Officer, Stoke Park Colony; 1, Manor Road, Fishponds, Bristol.

1916. Brown, William, D.Sc.Lond., M.A., M.D., B.Ch.Oxon., 88, Harley Street, London, W. 1. (Wilde Reader in Mental Philosophy, Univ. Oxford.) (Lect. on Psycho-therapy, King's Coll. Hosp.)

1917. Bruce, Alexander Ninian, D.Sc., M.D., F.R.C.P.Edin., 8, Ainslie Place, Edinburgh. (Lect. on Neurol., Univ. of Edin.)

1928. Bruce, David Kennedy, M.B., Ch.B.Glasg., Medical Officer, Storthes Hall Mental Hospital, Kirkburton, near Huddersfield.

1893. Bruce, Lewis C., *M.C.*, M.D., F.R.C.P.Edin., M.P.C., Medical Superintendent, Perth District Asylum, Druid Park, Murthly. (*Secretary, Scottish Division*, 1901-1907.) (*Co-Editor of Journal*, 1911-1916.)

1927. Brunlees, Oswald, L.R.C.P. & S.Edin., Deputy Medical Superintendent, Isle of Wight Mental Hospital, Whitecroft, Newport.

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1913. Brunton, George Llewellyn, M.D., Ch.B.Edin., Medical Superintendent, City Mental Hospital, Mapperley Hill, Nottingham.

1920. Bryce, William Henderson, M.B., C.M.Edin., Gifford Bank, Gifford, East Lothian.

1912. Buchanan, William Murdoch, M.B., Ch.B.Glasg., Medical Superintendent, Kirklands Mental Hospital, Bothwell, Lanarkshire. (*Secretary, Scottish Division since* 1920.)

1912. Burke, Joseph Dominick Gabriel, M.B., B.Ch.R.U.I., Deputy Medical Superintendent, St. Audrey's Hospital, Melton, Suffolk.

1928. Burke, Noel Hawley Michael, M.R.C.S., L.R.C.P.Lond., D.P.M., D.M.R.E.Camb., Assistant Medical Officer, Fountain Mental Hospital, The Grove, Tooting, S.W. 17.

1924. Bushe, Charles Kendal, *O.B.E.*, B.A., M.D., B.Ch.Dubl., Surg.-Capt., R.N., c/o Admiralty Medical Department, London, S.W. 1.

1921. Buzzard, Sir Edward Farquhar, Bart., *K.C.V.O.*, M.A., M.D., B.Ch.Oxon., F.R.C.P.Lond., Physician to H.M. The King; Regius Professor of Medicine, Oxford University; 85, Banbury Road, Oxford.

1928. Calder, Flora Hannah Macdonald, M.A., M.B., Ch.B.Edin., Assistant Medical Officer, Lancashire County Mental Hospital, Winwick, Warrington.

1921. Caldicott, Charles Holt, *M.B.E.*, M.B., M.R.C.S., L.R.C.P.Lond., Grantbourne, Chobham, Surrey.

1928. Caldwell, William Alexander, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Hanwell Mental Hospital, Southall, Middlesex.

1925. Cameron, Donald Ewan, M.B., Ch.B.Glasg., D.P.M., Brandon Hospital for Mental Diseases, Brandon, Manitoba, Canada.

1928. Cameron, Viola Cameron, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Springfield Mental Hospital Annexe, Kingston Road, New Malden, Surrey.

1894. Campbell, Alfred Walter, M.D., C.M.Edin., M.P.C., Macquarie Chambers, 183, Macquarie Street, Sydney, New South Wales.

1897. Campbell, Robert Brown, M.D., C.M., F.R.C.P.Edin., Medical Superintendent, Stirling District Mental Hospital, Larbert. (*Secretary, Scottish Division*, 1910–20, *and Chairman since* 1929.)

1927. Carey, Catherine, M.B., B.Ch.N.U.I., Assistant Medical Officer, Farnham House, Finglas, co. Dublin.

1905. Carre, Henry, L.R.C.P.&S.Irel., Medical Superintendent, Glasgow District Mental Hospital, Woodilee, Lenzie, N.B.

1901. Carswell, John, F.R.F.P.S.Glasg., L.R.C.P.Edin., *J.P.*, 6, Montagu Place, W. 1.

1925. Cassin, Patrick Joseph, M.D., B.Ch.N.U.I., D.M.D., Assistant Medical Officer, Mental Hospital, Kilkenny, Ireland.

1922. Casson, Elizabeth, M.D., Ch.B.Brist., D.P.M., Dorset House, Clifton, Bristol.

1928. Cates, Henry Joseph, M.D.Lond., Medical Superintendent, Northwoods House, Winterbourne, Bristol.

1888. Chambers, James, M.A., M.D.R.U.I., M.P.C., The Priory, Roehampton, London, S.W. 15. (*Assistant Editor*, 1900–05, *and Co-Editor of Journal*, 1905–1914.) (*Treasurer since* 1917.) (PRESIDENT, 1913–14.)

1911. Chambers, Walter Duncanon, M.A., M.D., Ch.B., F.R.C.P.Edin., M.P.C., Physician Superintendent, James Murray's Royal Asylum; Murray House, Perth.

1928. Chapman, Theonie Renée, M.B., B.S.Durh., Assistant Medical Officer, Northumberland Mental Hospital, Morpeth.

1928. Chennell, Eileen Anne, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Cheddleton Mental Hospital, near Leek, Staffs.

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1923. Chevens, Leslie Charles Frederick, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Cheshire County Mental Hospital, Parkside, Macclesfield.

1917. Chisholm, Percy, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Medical Superintendent, Queen Mary Hospital, Hammersprings, New Zealand.

1907. Chislett, Charles Game Angus, M.B., Ch.B., F.R.F.P.S.Glasg., Medical Superintendent, Stoneyetts, Chryston, Lanark.

1921. Cholmeley, Mountague Adye, M.R.C.S., L.R.C.P.Lond., D.P.M. (Retired), Heigham Hall, Norwich.

1920. Clark, Ronald Murray, M.B., C.M.Edin., Medical Superintendent, Lancashire County Mental Hospital, Whittingham, Preston.

1907. Clarke, Geoffrey, M.D.Lond., Medical Superintendent, London County Mental Hospital, Bexley, Kent.

1907. Clarkson, Robert Durward, B.Sc., M.D., C.M., F.R.C.P.Edin., Medical Officer, Scottish National Institute for the Education of Imbecile Children; The Park, Larbert, Stirlingshire. (Lect. on Ment. Deficiency, Univ. of Edin.)

1925. Cobb, Geoffrey Francis, M.R.C.S., L.R.C.P.Lond., D.P.M., M.P.C., Deputy Medical Superintendent, The Manor, Epsom.

1900. Cole, Sydney John, M.A., M.D., B.Ch.Oxon., Medical Superintendent, Wilts County Mental Hospital, Devizes.

1906. Collier, Walter Edgar, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Kent County Mental Hospital, Barming Heath, Maidstone.

1903. Collins, Michael Abdy, *O.B.E.*, M.D., B.S., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Kent County Mental Hospital, Chartham Downs. (*Hon. General Secretary*, 1912–18.) (*Vice-Chairman, Educational Committee*, 1919–27.)

1910. Conlon, Thomas Peter, L.R.C.P.&S.Irel., Resident Medical Superintendent, District Mental Hospital, Monaghan.

1921. Connell, Ernest Henry, M.B., Ch.B.Edin., D.P.M., 7, Greenhill Gardens, Edinburgh.

1920. Connell, Oliver George, *M.C.*, L.R.C.P.&S.Irel., Medical Superintendent, St. Andrew's Hospital, Thorpe, Norwich.

1914. Connolly, Victor Lindley, *M.C.*, M.B., B.Ch.Belf., D.P.M., Medical Superintendent, Hants County Mental Hospital, Park Prewett, Basingstoke.

1927. Cook, Leslie Colin, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, London County Mental Hospital, Bexley, Kent.

1910. Coombes, Percival Charles, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Surrey County Mental Hospital, Netherne, nr. Coulsdon.

1927. Cooper, James Woodman Astley, L.S.A., L.R.C.S., L.R.C.P., Middleton Hall Private Mental Hospital, Almora Hall, Middleton St. George, Durham.

1928. Copeland, Cecil Leonard, M.B., Ch.B.Liverp., D.P.M., Assistant Medical Officer, West Riding Mental Hospital, Wakefield.

1903. Cormac, Harry Dove, M.B., M.S.Madras, D.P.M., Medical Superintendent, Cheshire County Mental Hospital, Parkside, Macclesfield; Parkside House, Macclesfield. (Lect. on Ment. Dis., Univ. of Manch.)

1891. Corner, Harry, M.D., M.R.C.S., L.R.C.P.Lond., M.P.C., Brook House, Southgate, London, N. 14.

1910. Coupland, William Henry, L.R.C.S.&P.Edin., L.R.F.P.S.Glasg., Medical Superintendent, Royal Albert Institution; Albert House, Haverbreaks, Lancaster.

1911. Cox, Donald Maxwell, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Hereford County Mental Hospital, Burghill.

1926. Coyne, William Joseph, M.D., B.Ch.N.U.I., D.P.M., Physician, Chiswick House, Pinner; "Clontarf," Barrow Point Avenue, Pinner, Middlesex.

1924. Craig, Alexander, M.B., Ch.B.Aberd., D.P.M., Assistant Physician, Royal Mental Hospital, Aberdeen.

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1893. Craig, Sir Maurice, *C.B.E.*, M.A., M.D., B.Ch.Camb., F.R.C.P.Lond., M.P.C., 4, Cambridge Gate, Regent's Park, London, N.W. 1. (*Secretary, Educational Committee*, 1905-8; *Chairman, Educational Committee*, 1912–19.)

1924. Craig, Roy Neville, M.D.Durh., M.R.C.S., L.R.C.P.Lond., D.P.M., Heath Court, Barton Road, Torquay.

1925. Creak, Eleanor Mildred, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, The Maudsley Hospital, Denmark Hill, London, S.E. 5.

1911. Crichlow, Charles Adolphus, M.B., Ch.B.Glasg., Senior Assistant Medical Officer, Bangour Village, Uphall, Linlithgowshire.

1915. Crosthwaite, Frederick Douglas, M.B., Ch.B.Edin., D.P.H., Physician Superintendent, West Koppies Mental Hospital, Pretoria, South Africa.

1923. Crow, Norah Annie, M.A.Edin., M.D., B.S.Lond., "Kingsclere," Harrington Road, Brighton.

1919. Cuthbert, James Harvey, M.B., Ch.B.Edin., D.P.M., Medical Superintendent, West Ham Mental Hospital, Goodmayes, Essex.

1907. Daniel, Alfred Wilson, B.A., M.D., B.Ch.Camb., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Hanwell Mental Hospital, Southall, Middlesex. (*Secretary, Educational Committee*, 1920–27.)

1926. Darlington, Arthur, B.A., M.B., Ch.B.Dubl., D.P.H., D.P.M., Deputy Medical Superintendent, Somerset and Bath Mental Hospital, Wells.

1896. Davidson, Andrew, M.D., C.M.Aberd., M.P.C., 221, Macquarie Street, Sydney, New South Wales.

1925. Davidson, Thomas Wishart, M.B., Ch.B.Glasg., D.P.M., Assistant Medical Officer and Pathologist, City Mental Hospital, Humberstone, Leicester.

1922. Davie, Thomas Macnaughton, *M.C.*, M.D., Ch.B.Edin., D.P.M., Barrister-at-Law, Medical Superintendent, East Riding Mental Hospital, Beverley, Yorks.

1928. Davies, Stuart Wyndham, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Kent County Mental Hospital, Maidstone.

1921. Davies-Jones, Charles William Saunderson, M.B., Ch.B.Edin., First Assistant Medical Officer, County and City Mental Hospital, Littlemore, Oxford.

1920. Dawson, William Siegfried, M.A., M.D., B.Ch.Oxon., M.R.C.P.Lond., M.R.C.S.Eng., D.P.M., Prof. of Psychiat., University of Sydney, New South Wales, Australia.

1926. Deane, Frederick John, M.B., Ch.B.Edin., Senior Assistant Medical Officer, Down County Mental Hospital, Downpatrick.

1925. Delany, John James, L.R.C.P.&S.Irel., 68, Wellington Road, Dublin.

1929. Denyssen, John Abraham Felix, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.

1901. De Steiger, Adele Isabella, M.D.Lond., Dormansland, Lingfield, Surrey.

1905. Devine, Henry, *O.B.E.*, M.D., B.S., F.R.C.P.Lond., M.R.C.S.Eng., M.P.C., Medical Superintendent, Holloway Sanatorium, Virginia Water, Surrey; The Ridge, Virginia Water, Surrey. (*Assistant Editor*, 1916–1920, *and Co-Editor of Journal*, 1920–27.) [Lect. on Psychol., Maudsley Hosp.]

1904. Devon, James, L.R.C.P.&S.Edin., F.R.F.P.S.Glasg., Prison Commissioner for Scotland; 3, Lockharton Gardens, Edinburgh.

1924. Devon, Martha Davidson, L.R.C.P. & S.Edin., L.R.F.P.S.Glasg., Isle of Eigg, Inverness-shire.

1925. Dhunjibhoy, Jal Edulji, M.B., B.S.Bomb., Capt., *I.M.S.*, Medical Superintendent, The Indian Mental Hospital, Kankè, Ranchi, Bihar and Orissa, India; c/o Lloyds Bank, 6, Pall Mall, S.W. 1.

1921. Dick, Alexander, *M.C.*, M.B., Ch.B.Glasg., Deputy Medical Superintendent, Glasgow District Mental Hospital, Woodilee, Lenzie, N.B.

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1922. Dickson, James, *M.C.*, M.B., Ch.B.Edin., Browne House, Hemstell Road, Southchurch, Southend-on-Sea.
1915. Dillon, Frederick, M.D., Ch.B.Edin., Medical Superintendent, Northumberland House, Finsbury Park, London, N. 4.
1909. Dillon, Kathleen, L.R.C.P.&S.Irel., Assistant Medical Officer, District Asylum, Mullingar.
1905. Dixon, J. Francis, M.A., M.D., B.Ch.Dubl., M.P.C., Medical Superintendent, City Mental Hospital, Humberstone, Leicester.
1928. Dodds, George Edward, M.B., B.Ch.Dubl., Assistant Medical Officer, St. Edmondsbury, Lucan, co. Dublin.
1879. Dodds, William John, D.Sc., M.D., C.M.Edin., 19, Marina Road, Prestwick, Ayrshire.
1892. Donelan, John O'Conor, L.R.C.P.&S.Irel., M.P.C., Medical Superintendent, Grangegorman Mental Hospital; St. Dymphna's, North Circular Road, Dublin. (Lect. on Ment. Dis., Univ. of Dubl.)
1928. Douglas-Morris, Ernest Mannering, L.M.S.S.A., Neurologist, Ministry of Pensions Clinic, Nottingham; Belvoir Nursing Home, Ashton-on-Trent, Derby.
1919. Drake-Brockman, Henry George, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, St. Luke's Hospital, Middlesbrough.
1916. Drummond, William Blackley, M.D., C.M., F.R.C.P.Edin., Garth Hill, Queensferry, Fife.
1921. Drury, Kenneth Kirkpatrick, *M.C.*, B.A., M.D., B.Ch.Dubl., D.P.M., Senior Assistant Medical Officer, Stafford County Mental Hospital; "Swift Brook," Corporation Street, Stafford.
1907. Dryden, Arthur Mitchell, M.B., Ch.B.Edin., Medical Superintendent, Glasgow District Mental Hospital, Gartloch, Gartcosh.
1902. Dudgeon, Herbert Wm., M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Director of the Lunacy Department of Public Health, and Director of Abbassia Mental Hospital, Egypt.
1899. Dudley, Francis, L.R.C.P.&S.Irel., Medical Superintendent, Cornwall County Mental Hospital, Bodmin.
1926. Duncan, Archibald Glen, M.D., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Essex County Mental Hospital, Severalls, Colchester.
1922. Duncan, William Arthur, M.B., Ch.B.Edin., Assistant Medical Officer, East Sussex County Mental Hospital, Hellingly, Sussex.
1923. Dunne, John, M.B., B.Ch.R.U.I., D.M.D., Grangegorman Mental Hospital, Dublin.
1922. Dunscombe, Nicholas Dunscombe, M.A., M.B., B.Ch.Camb., L.M.S.S.A., D.P.H., Barrister-at-Law, Medical Officer of Health; Town Hall, Bexhill, Sussex.
1903. Dunston, John Thomas, M.D., B.S.Lond., Commissioner for Mental Hygiene, Union of South Africa, and Medical Superintendent, West Koppies Mental Hospital, Pretoria, South Africa.
1923. Dwyer, Patrick Joseph, M.B., B.Ch.R.U.I., Deputy Medical Superintendent, Portrane Mental Hospital, Dublin.

1906. Eager, Richard, *O.B.E.*, M.D., Ch.B.Aberd., M.P.C., Medical Superintendent, Devon County Mental Hospital, Exminster.
1891. Earls, James Henry, M.D., M.Ch.R.U.I., L.S.A., D.P.H., M.P.C., Barrister-at-Law: Fenstanton, Christchurch Road, Streatham Hill, London, S.W. 2.
1921. East, Guy Roland, M.D., B.S., B.Hy.Durh., D.P.H., Medical Superintendent, Northumberland County Mental Hospital, Cottingwood, Morpeth.
1907. East, Wm. Norwood, M.B., M.R.C.S., M.R.C.P.Lond., M.P.C., Medical Inspector, H.M. Prisons (England and Wales); Prison Commission, Home Office, Whitehall, Westminster, S.W. 1.
1895. Easterbrook, Charles C., M.A., M.D., F.R.C.P.Edin., M.P.C., *J.P.*, Physician-Superintendent, Crichton Royal Institution, Dumfries.

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1924. Eddison, Herbert Wilfred, M.A., M.D.Camb., M.R.C.S., L.R.C.P.Lond., D.P.M., Medical Superintendent, Wonford House Hospital, Exeter.

1928. Edelston, Harry, M.B., B.Ch.Leeds, D.P.M., Senior Assistant Medical Officer, West Riding Mental Hospital, Wakefield.

1895. Edgerley, Samuel, M.A., M.D., C.M.Edin., M.P.C., Medical Superintendent, West Riding Mental Hospital, Menston, Leeds.

1897. Edwards, Francis Henry, M.D.Brux., M.R.C.S., M.R.C.P.Lond., "Cherchefelle," Reigate, Surrey.

1924. Edwards, Thomas Lloyd, L.R.C.P.&S Edin., L.R.F.P.S.Glasg., D.P.M., Assistant Medical Officer, Glamorgan County Mental Hospital, Bridgend.

1919. Eggleston, Henry, M.B., B.S.Durh., M.P.C., 21, Pinner Hill Road, Pinner, Middlesex.

1901. Elgee, Samuel Charles, *O.B.E.*, L.R.C.P.&S.Irel., Medical Superintendent, Cane Hill Mental Hospital, Coulsdon, Surrey.

1889. Elkins, Frank Ashby, M.D., C.M.Edin., M.P.C., Hormead, Parkside Drive, Watford, Herts.

1908. Ellison, Arthur, M.R.C.S., L.R.C.P.Lond., 120, Domestic Street, Holbeck, Leeds.

1901. Erskine, Wm. J. Adams, M.D., C.M.Edin., Medical Superintendent, Isle of Wight Mental Hospital, Whitecroft, Newport.

1926. Esson, Walter Louis, M.A., M.B., Ch.B.Aberd., 21, Oldham Road, Miles Platting, Manchester.

1895. Eurich, Frederick Wilhelm, M.D., C.M.Edin., Lanshawe Cottage, Ilkley, Yorks. (Prof. of For. Med., Univ. of Leeds.)

1909. Eustace, William Neilson, L.R.C.S.&P.Irel., Resident Medical Officer, "Lisrouagh," Glasnevin, Dublin.

1918. Evans, Albert Edward, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., D.P.H., Inspector, Board of Control, Caxton House West, Westminster, S.W. 1; 3, Rotherwick Court, Golders Green, London, N.W. 11.

1927. Ewan, Grey Lamont, *J.P.*, B.Sc., M.B., Ch.M.Sydney, D.P.M., Medical Superintendent, The Mental Hospital, Stockton, nr. Newcastle, New South Wales.

1891. Ewan, John Alfred, M.A.St.And., M.D., C.M.Edin., M.P.C., Greylees, Godalming, Surrey.

1914. Ewing, Cecil Wilmot, L.R.C.P.&S.Irel., D.P.M., Medical Superintendent, Storthes Hall Mental Hospital, Kirkburton, nr. Huddersfield.

1929. Fairbairn, William Ronald Dodds, M.A., M.D., Ch.B.Edin., Dipl. Psych., Psychologist, Jordanburn Nerve Hospital; 18, Lansdowne Crecent, Edinburgh. (Lect. on Psych., Univ. of Edin.)

1925. Fairweather, Anne, M.B., B.S.Durh., D.P.M., Senior Assistant Medical Officer,

1908. Fenton, Henry Felix, M.B., Ch.B.Edin., Medical Superintendent, Worcester County and City Mental Hospital, Powick.

1928. Finiefs, Leonidas Aristodimos, M.R.C.S., L.R.C.P.Lond., M.D.Paris, Assistant Medical Officer, Three Counties Mental Hospital, Arlesey, Beds.

1889. Finlay, David, M.D., C.M.Glasg., Medical Superintendent, Glamorgan Mental Hospital, Bridgend.

1906. Firth, Arthur Harcus, M.A., M.D., B.Ch.Edin., Deputy Medical Superintendent, Worcester County Mental Hospital, Barnesley Hall, Bromsgrove.

1903. Fitzgerald, Alexis, L.R.C.P.&S.Irel., Medical Superintendent, District Mental Hospital, Waterford.

1929. FitzGerald, Edward Joseph, M.B., B.Ch.N.U.I., Assistant Medical Officer, Lancashire County Mental Hospital, Winwick, Warrington.

1908. Fitzgerald, James Francis, L.R.C.P.&S.Irel., Assistant Medical Officer, District Mental Hospital, Clonmel.

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1928. Fitzgerald, John, M.B., B.Ch.N.U.I., M.D., D.M.D., Assistant Medical Officer, Grangegorman Mental Hospital, Dublin.

1921. Fleming, Gerald William Thomas Hunter, M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Dorset County Mental Hospital, Herrison, near Dorchester.

1904. Fleming, Wilfrid Louis Remi, M.R.C.S., L.R.C.P.Lond., *J.P.*, Suffolk House, Pirbright, Surrey.

1925. Flind, James, M.B., Ch.B.Glasg., Senior Assistant Medical Officer, Peckham House, London, S.E. 15.

1925. Forbes, Hugh Scott, M.R.C.S., L.R.C.P.Lond., D.P.M., Windermere Avenue, North Finchley, London, N. 3.

1927. Ford-Robertson, William Marsden, M.B., Ch.B.Edin., Assistant Medical Officer, Pathologist and Bacteriologist, St. Andrew's Hospital; 66, Billing Road, Northampton.

1911. Forrester, Archibald Thomas William, M.D., B.S., M.R.C.S., L.R.C.P. Lond., Medical Superintendent, Warwick County Mental Hospital, Hatton.

1926. Forrester, Robert Cairns, M.B., Ch.B.Edin., Assistant Medical Officer, Stirling District Mental Hospital, Larbert.

1916. Forsyth, Charles Wesley, M.D., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Winson Green Mental Hospital, Birmingham. (Clin. Lect. on Ment. Dis., Univ. of Birm.)

1924. Forsythe, Thomas Ronald, M.B., Ch.B.Sheff., D.P.M., Assistant Medical Officer, Kent County Mental Hospital, Maidstone.

1913. Forward, Ernest Lionel, M.R.C.S., L.R.C.P.Lond., D.C.M.S. Ministry of Pensions, 1, Sanctuary Buildings, London, S.W. 1.

1925. Fox, Francis Elliot, B.A.Camb., M.R.C.S., L.R.C.P.Lond., Medical Officer, Brislington House, Bristol.

1920. Fox, J. Tylor, M.A., M.D., B.Ch.Camb., M.R.C.S., L.R.C.P.Lond., D.P.M., Medical Superintendent, Lingfield Epileptic Colony; The Homestead, Lingfield, Surrey.

1923. Franklin, Marjorie Ellen, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant, London Clinic for Psycho-Analysis; 86, Harley Street, London, W. 1.

1919. Fraser, Kate, B.Sc., M.D., Ch.B.Glasg., D.P.H., Deputy Commissioner, General Board of Control, Scotland; 25, Palmerston Place, Edinburgh.

1928. Fraser, William, B.Sc., M.B., Ch.B.Glasg., D.P.H., D.P.M., Deputy Medical Superintendent, North Riding Mental Hospital, York.

1921. Fuller, Hugh Hercus Cavendish, M.B., Ch.B.Edin., "Tedstone," Orchard Road, Great Malvern.

1902. Fuller, Lawrence Otway, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Three Counties Mental Hospital, Arlesey, Beds.

1928. Gall, Herbert, M.R.C.S., L.R.C.P.Lond., Major, *R.A.M.C.*, Officer-in-Charge, "D" Block, Royal Victoria Hospital, Netley.

1928. Gallagher, Charles Eddie, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Leavesden Mental Hospital, Abbot's Langley, Watford, Herts.

1927. Gamble, Florence Margaret, M.D., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Warwick County Mental Hospital, Hatton.

1906. Gane, Edward Palmer Steward, M.D.Durh., M.R.C.S., L.R.C.P. Lond., Castle Green, Llansawel, Llandilo, Carmarthen.

1928. Gardner, Dorothy Margaret, M.B., B.Ch.Belf., D.P.H., Assistant Medical Officer, Belfast Mental Hospital, Purdysburn, Belfast.

1912. Garry, John William, M.B., B.Ch.N.U.I., Assistant Medical Superintendent, District Mental Hospital, Ennis, co. Clare.

1912. Gavin, Lawrence, M.B., Ch.B., L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Medical Superintendent, District Asylum, Mullingar.

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1896. Geddes, John William, M.B., C.M.Edin., Pembury Lodge, Pembury Road, Worthing.

1923. **Gibson, George Herbert Rae**, *D.S.O.*, M.D., F.R.C.P.Edin., L.C.P.S. Brit. Columbia, Dipl. Psych.; Deputy Commissioner, General Board of Control, Scotland; 23, Cluny Terrace, Edinburgh.

1919. Gifford, John, B.A.Cape, M.B., Ch.B.Edin., D.P.M., Deputy Medical Superintendent, Lancashire County Mental Hospital, Winwick, Warrington.

1921. Gilfillan, John Aitken, M.D., Ch.B., F.R.F.P.S.Glasg., D.P.M., Deputy Medical Superintendent, North Riding Mental Hospital, Clifton, York; Hillside, Drymen, Stirlingshire.

1899. Gilfillan, Samuel James, *O.B.E.*, M.A., M.B., C.M.Edin., Medical Superintendent, Bailbrook House, Bath.

1923. Gillespie, Isabella Annie, M.B., B.Ch.Edin., D.P.M., Senior Assistant Medical Officer, Cheshire County Mental Hospital, Upton, Chester.

1921. Gillespie, Robert Dick, M.D., Ch.B.Glasg., M.R.C.P.Lond., D.P.M., 25, Upper Wimpole Street, London, W. 1. (Lect. on Psychiat. Med., Guy's Hosp.)

1920. Gillis, Kurt, M.B., Ch.B.Edin., Assistant Physician-Superintendent, Mental Hospital, Bloemfontein, South Africa.

1897. Gilmour, John Rutherford, M.B., C.M., F.R.C.P.Edin., M.P.C., Medical Superintendent, West Riding Mental Hospital, Scalebor Park, Burley-in-Wharfedale, Yorks. (*Secretary, N. and M. Division*, 1920–28, *and Chairman since* 1929.)

1906. Gilmour, Richard Withers, M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Physician-in-Charge, St. Luke's Hospital; 39, Harley Street, London, W. 1. (Lect. on Psychiat., Middlx. Hosp.)

1929. Glaister, John Norman, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Northumberland House, N. 4, Physician, British Hospital for Nervous and Mental Disorders; 2, Devonshire Place, W. 1.

1927. Goitein, Percy L., M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, City Mental Hospital, Canterbury.

1923. Golla, Frederick Lucien, M.A., M.B., B.Ch.Oxon., F.R.C.P.Lond., Director of the Laboratory and Pathologist, London County Mental Hospitals, The Maudsley Hospital, Denmark Hill, London, S.E. 5; The Dene, Sunninghill, Berks. (Lect. on Physiol. and Pathol. of the Nervous System, Maudsley Hospital.)

1897. Good, Thomas Saxty, *O.B.E.*, M.A.Oxon., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, County and City Mental Hospital, Littlemore, Oxford. (PRESIDENT-ELECT, 1929–30.)

1889. Goodall, Edwin, *C.B.E.*, M.D., B.S., F.R.C.P.Lond., M.P.C., "Fairlawn," Kingsway, Hove, Sussex. (*Assistant Editor*, 1894–5; *Editor*, 1894–98). (PRESIDENT, 1923–24.)

1920. Gordon, George, M.B., Ch.B.Glasg., The Mill House, Elsenham, Bishops Stortford.

1899. Gordon, James Leslie, M.D., C.M.Aberd., "Karaissi," Caterham, Surrey.

1928. Gordon, Ronald Grey, D.Sc., M.D., F.R.C.P.Edin., 9, The Circus, Bath.

1901. Gostwyck, Cecil Hubert Gostwyck, M.B., Ch.B., F.R.C.P.Edin., Dipl. Psych., M.P.C., Deputy Medical Superintendent, Rampton State Institution, Retford, Notts.

1923. Gough, Isabel Falconer, M.B., Ch.B., L.R.C.P.&S.Edin., L.R.F.P.S. Glasg., D.P.M., Three Corner Park, Calstock, Cornwall.

1928. Grace, Pierce, L.R.C.P.&S.I., Resident Medical Superintendent, District Mental Hospital, Portlaoighise (Maryborough), Co. Leix.

1914. Graham, Norman Bell, *M.C.*, B.A.R.U.I., M.B., B.Ch.Belf., D.P.M., Senior Assistant Medical Officer, Purdysburn Villa Colony, Belfast.

1894. Graham, Samuel, L.R.C.P.Lond., Resident Medical Superintendent, District Asylum, Antrim.

1918. Graham, Samuel John, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Resident Medical Superintendent, Purdysburn Villa Colony, Belfast.

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1908. Graham, William Shepherd, M.B., B.Ch.R.U.I., Senior Assistant Medical Officer, Somerset and Bath Mental Hospital, Cotford, near Taunton.

1921. Grant, Alastair Robertson, M.D., Ch.B.Aberd., Deputy Medical Superintendent, Lancashire County Mental Hospital, Whittingham, Preston.

1925. Grant, John King, M.B., Ch.B.Aberd., Assistant Physician, Royal Asylum, Montrose.

1915. Graves, Thomas Chivers, B.Sc., M.D., B.S.Lond., F.R.C.S.Eng., L.R.C.P.Lond., M.R.C.V.S., Medical Superintendent, Rubery Hill and Hollymoor Mental Hospitals, Northfield, Birmingham.

1916. Gray, Cyril, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Senior Assistant Medical Officer, City Mental Hospital, Gosforth, Newcastle-upon-Tyne.

1928. Gray, James, M.B., Ch.B.Edin., Assistant Medical Officer, "Jemimaville," Poyntzfield-by-Cononbridge, Ross-shire.

1921. Gray, Joseph Anthony Wenceslaus Pereira, M.D.Brux., M.R.C.S., L.R.C.P.Lond., Visitor of Licensed Houses; 3, Northernhay Place, Exeter.

1909. Greene, Thomas Adrian, L.R.C.S.&P.Irel., *J.P.*, Medical Superintendent, District Mental Hospital, Carlow.

1922. Gregorson, Albert William, M.D., Ch.B., F.R.F.P.S.Glasg., Assistant Physician and Deputy Superintendent, North Middlesex Hospital, Edmonton, London, N. 18; 9, Aubrey Crescent, Largs, Ayrshire.

1927. Grierson, Hugh Arrowsmith, *M.C.*, M.B., B.S.Lond., Medical Officer, H.M. Prison, Leeds.

1926. Griffiths, Gwenvron Mary, M.D., M.R.C.P.Lond., "Pendre," Newport, Pembrokeshire.

1901. Grills, Galbraith Hamilton, M.D., B.Ch.R.U.I., D.M.D., M.P.C., Medical Superintendent, Cheshire County Mental Hospital, Upton, Chester.

1916. Grimbly, Alan Francis, M.A., M.D., B.Ch.Dubl., D.P.M., 43, Killieser Avenue, Streatham Hill, London, S.W. 2.

1923. Grossman, Simon, M.R.C.S., L.R.C.P.Lond., 21, Shaa Road, East Acton, W. 3.

1922. Guppy, Francis Henry, *M.C.*, M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Brighton Mental Hospital, Haywards Heath, Sussex.

1894. Halsted, Harold Cecil, M.D.Durh., L.S.A., M.R.C.S., L.R.C.P.Lond., Manor Road, Selsey, Sussex.

1928. Hamilton, John Gerard, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Deputy Medical Superintendent, Holloway Sanatorium, Virginia Water, Surrey.

1920. Hancock, Allen Coulter, *M.C.*, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.H., D.P.M., Medical Superintendent, Kent County Mental Hospital, Barming Heath, Maidstone.

1929. Handley, Richard, M.B., Ch.B.Manch., D.P.M., Boothroyden House, Rhodes, Manchester.

1930. Hannesson, Hannes, B.Sc., M.R.C.S., L.R.C.P.Lond., London Hospital, Whitechapel Road, E. 1.

1923. Hardcastle, Douglas Noël, M.R.C.S., L.R.C.P.Lond., D.P.M., Physician, Moorcroft House and Hayes Park; c/o Westminster Bank, Birkenhead.

1920. Harding, Edward Palmer, L.R.C.P.&S.Irel., Deputy Medical Superintendent, East Riding Mental Hospital, Beverley.

1920. Harper, Raymond Sydney, M.R.C.S., L.R.C.P.Lond., 36, First Avenue, Hove, Sussex.

1904. Harper-Smith, George Hastie, M.A., M.D.Camb., M.R.C.S., L.R.C.P. Lond., Medical Superintendent, Brighton Mental Hospital; Galagate, Haywards Heath, Sussex.

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1924. Harris, John Stuart, M.D., Ch.B.Edin., M.R.C.P.Lond., D.P.M., Senior Assistant Medical Officer, The Maudsley Hospital, Denmark Hill, London, S.E. 5.

1928. Harris, Noel Gordon, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Springfield Mental Hospital, near Tooting, S.W. 17.

1898. Harris-Liston, Llewellyn, M.D.Brux., L.S.A., M.R.C.S., L.R.C.P.Lond., The Grove, Middleton St. George, co. Durham.

1928. Harrowes, William McConnachie, M.B., Ch.B.Glasg., Research Student, Glasgow Royal Mental Hospital, Gartnavel.

1905. Hart, Bernard, M.D., F.R.C.P.Lond., M.R.C.S.Eng., 94, Harley Street, London, W. 1. (Lect. on Ment. Dis., Univ. Coll. Hosp.)

1892. Haslett, William John Handfield, M.R.C.S., L.R.C.P.Lond., M.P.C., *J.P.*, Resident Medical Superintendent, Halliford House, Sunbury-on-Thames.

1923. Hayes, Edmund Duncan Tranchell, B.A., M.D., B.Ch.Dubl., D.P.M., Senior Assistant Medical Officer, County Mental Hospital, Berry Wood, Northampton.

1924. Hayes, Henry Douglas, M.D., Ch.B.Edin., D.P.M., The Mental Hospital, Porirua, Wellington, New Zealand.

1920. Haynes, Horace Guy Lankester, M.R.C.S., L.R.C.P.Lond., Littleton Hall, Brentwood, Essex. (*Secretary, Parliamentary Committee since* 1929.)

1927. Healey, Frederick Henry, B.Sc., M.B., Ch.B.Birm., D.P.M., Assistant Medical Officer, Cheshire County Mental Hospital, Upton, Chester.

1920. Henderson, Cyril John, M.B.Durh., Assistant Medical Officer, The Royal Albert Institution, Lancaster.

1929. Henderson, David, M.D., Ch.B.Glasg., Assistant Medical Officer and Pathologist, Stafford County Mental Hospital, Cheddleton; The Hollies, Cheddleton, near Leek.

1916. Henderson, David Kennedy, M.D., Ch.B.Edin., F.R.F.P.S.Glasg., Physician Superintendent, Glasgow Royal Mental Hospital, Gartnavel; 2, Whittingehame Gardens, Glasgow. (Lect. on Ins., Univ. of Glasg.)

1905. Henderson, George, M.A., M.B., Ch.B.Edin., 25, Commercial Road, Peckham, London, S.E. 15.

1923. Henderson, Norman Keane, B.A., LL.B.Camb., M.B., Ch.B.Edin., D.P.H., D.P.M., Medical Superintendent, Kesteven Mental Hospital, Greylees, Sleaford, Lincs.

1924. Hensman, Henry Saumarez, L.M.&S.Madras, M.R.C.S., L.R.C.P.Lond., M.P.C., Medical Superintendent, Government Mental Hospital, Kilpauk, Madras.

1924. Herbert, James Edward, M.B., B.Ch.R.U.I., Senior Assistant Medical Officer, District Asylum, Omagh.

1925. Heron, John, M.B., Ch.B.Edin., D.P.M., 78, Bonaly Road, Edinburgh.

1929. Hewitt, Edward John Campbell, M.B., Ch.B.Edin., D.P.M., Assistant Medical Officer and Pathologist, Napsbury Mental Hospital, St. Albans, Herts.

1929. Hext, Catherine Mary, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Holloway Sanatorium, Virginia Water, Surrey.

1912. Higson, William Davies, M.B., Ch.B.Liverp., D.P.H., Medical Officer, H.M. Prison; "Eversley," Boxley Road, Maidstone, Kent.

1927. Hinchco, Harold, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.

1900. Hollander, Bernard, M.D.Freib., M.R.C.S., L.R.C.P.Lond., 57, Wimpole Street, London, W. 1.

1929. Holmes, Eric Gordon, M.A., M.B., B.Ch.Camb., Assistant to the Downing Professor of Medicine, Examiner in Pharmacology, Cambridge; Pharmacological Laboratory, Cambridge.

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1925. Home, Bruce Fordyce, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., c/o D.M.S., Lagos, Nigeria.

1925. Honan, Bernard Francis, L.R.C.P.&S.Irel., D.P.M., Assistant Medical Officer, Down County Mental Hospital, Downpatrick.

1920. Hooper, Reginald Arthur, M.B., B.S.Durh., Medical Superintendent, City Mental Hospital, Fulford, Yorks.

1929. Hopkins, Edwin Lancelot, M.R.C.S., L.R.C.P.Lond., D.P.H., D.P.M., Deputy Medical Superintendent, West Park Mental Hospital, Epsom, Surrey.

1926. Hopwood, Joseph Stanley, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Medical Officer, State Criminal Lunatic Asylum, Broadmoor.

1926. Horton, Phyllis Mary, M.R.C.S., L.R.C.P.Lond., D.P.M., Wye House, Buxton.

1918. Horton, Wilfred Winnall, M.D., C.M.Edin., Medical Superintendent, Wye House, Buxton.

1926. Hosie, William, M.B., Ch.B.Glasg., Assistant Medical Officer, Derby County Mental Hospital, Mickleover.

1894. Hotchkis, Robert Dunmore, M.A.Glasg., M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C., Medical Superintendent, Renfrew District Mental Hospital, Dykebar, Paisley.

1928. Howie, James Erskine, M.D., Ch.B.Liverp.., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Lancashire County Mental Hospital, Prestwich, Manchester.

1900. Hughes, Percy T., M.B., C.M.Edin., D.P.H., Medical Superintendent, Worcester County Mental Hospital, Barnesley Hall, Bromsgrove. (Lect. on Ment. Dis., Univ. of Birm.)

1904. Hughes, William Stanley, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Medical Superintendent. Salop County Mental Hospital, Bicton Heath, Shrewsbury.

1897. Hunter, David, M.A., M.B., B.Ch.Camb., L.S.A., Medical Superintendent, The Coppice, Nottingham. (*Secretary, S.E Division*, 1910–1913.)

1912. Hunter, George Yeates Cobb, M.R.C.S., L.R.C.P.Lond., M.P.C., *I.M.S.*, c/o Messrs. Grindlay & Co., 54, Parliament Street, London, S.W. 1.

1928. Hunter, James Dewar Hunter, M.B., Ch.B.N.Z., Dipl. Psych., Assistant Medical Officer, Mental Hospital, Seacliffe, Otago, New Zealand.

1904. Hunter, Percy Douglas, M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Three Counties Mental Hospital, Arlesey.

1911. Hutton, Isabel Emslie, M.D., Ch.B.Edin., Hon. Physician, British Hospital for Mental and Nervous Disorders; 6, Montagu Place, London, W. 1.

1888. Hyslop, Theo. Bulkeley, M.D., C.M., M.R.C.P., L.R.C.S., F.R.S.Edin., M.P.C., 5, Portland Place, London, W. 1. (*Chairman, Library Committee*, 1926–27.)

1926. Illingworth, Reginald Ernest, L.R.C.P.&S., L.D.S.Edin., Dipl. Psych., Deputy Medical Superintendent, Northumberland County Mental Hospital, Cottingwood, Morpeth.

1915. Ingall, Frank Ernest, L.R.C.P.Lond., F.R.C.S.Eng., D.P.H., Public Health Offices, Clarence Street, Southend-on-Sea.

1926. Ironside, Archibald Jennings, M.B., Ch.B.Aberd., Senior Assistant Physician, Witrand Institution, Potchefstroon, South Africa.

1906. Irwin, Peter Joseph, L.R.C.P.&S.Irel., Medical Superintendent, District Mental Hospital, Limerick.

1923. Jack, Victor William, M.B., Ch.B.Edin., Pullskie, Conon Bridge, Ross-shire.

1920. Jackson, John Luke, M.B., B.Ch.Belf., Medical Superintendent, Hants County Mental Hospital, Knowle, Fareham.

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1927. Jacob, Frank Harwood, M.D., F.R.C.P.Lond., Hon. Physician, General Hospital ; 32, Regent Street, Nottingham.

1927. Jacobson, Jack Nathan, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Tooting Bec Mental Hospital, London, S.W. 17.

1914. James, George William Blomfield, *M.C.*, M.D., B.S.Lond., L.S.A., D.P.M., Physician, Moorcroft House, Hillingdon, Uxbridge. (*Secretary, Parliamentary Committee*, 1926–29.) (Lect. on Ment. Dis., St. Mary's Hosp.)

1922. Jarrett, Reginald Fitzroy, F.R.F.P.S.Glasg., L.M.S.S.A., Medical Superintendent, Brentry Certified Institution, Westbury-on-Trym, Bristol.

1908. Jeffrey, Geo. Rutherford, M.D., Ch.B.Glasg., F.R.C.P., F.R.S.Edin., M.P.C., Medical Superintendent, Bootham Park, York.

1925. Jenkins, John Alexander, M.B., Ch.B.Glasg., Senior Assistant Medical Officer, Mental Hospital, Larbert.

1924. Jenkins, Reginald Edward, L.M.S.S.A., Egmont House, Brighton Road, Sutton.

1893. Johnston, Gerald Herbert, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Brooke House, Upper Clapton, London, E. 5.

1928. Johnston, James McLaughlan, M.B., Ch.B.Edin., Assistant Medical Officer, Mental Hospital, Westgreen, Dundee ; 33, Albany Street, Leith.

1905. Johnston, Thomas Leonard, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Leadenham, Lincs.

1903. Johnstone, Thomas, M.D., C.M.Edin., M.R.C.P.Lond., 17, Moor Park Avenue, Preston, Lancs.

1928. Kameneff, Vladimir, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Hants County Mental Hospital, Knowle, Fareham, Hants.

1879. Kay, Walter Smith, M.D., C.M.Edin., M.R.C.S.Eng., Granby Hotel, Harrogate.

1927. Kearney, Joseph, M.B., B.Ch.R.U.I., Assistant Medical Officer, Tirconaill District Mental Hospital, Letterkenny, Ireland.

1886. Keay, John, *C.B.E.*, M.D., C.M.Glasg., F.R.C.P.Edin., Medical Superintendent, Bangour Village, Uphall, Linlithgowshire. (PRESIDENT 1918.) (*Chairman, Educational Committee*, 1920–27.) (Lect. on Ment. Dis., Roy. Colls., Edin.)

1907. Keene, George Henry, M.D., B.Ch.Dubl., Medical Superintendent, Stewart Institution, Palmerston ; 14, Palmerston Park, Dublin.

1909. Keith, William Brooks, *M.C.*, M.D., Ch.B.Aberd., M.P.C., Medical Superintendent, St. Audry's Hospital, Melton ; Redwald House, Melton, Suffolk. (*Secretary, Parliamentary Committee*, 1921–26.)

1924. Kelly, Daniel Lane, L.R.C.P.&S.Irel., Inspector of Mental Hospitals, Local Government Department ; 52, Grosvenor Road, Rathgar, Dublin.

1899. Kennedy, Hugh T. J., L.R.C.P.&S.Irel., Medical Superintendent, District Mental Hospital, Enniscorthy.

1897. Kerr, Hugh, M.A., M.D., C.M.Glasg., Medical Superintendent, Bucks County Mental Hospital, Stone, Aylesbury.

1902. Kerr, Neil Thomson, M.B., C.M.Edin., *J.P.*, Medical Superintendent, Lanark District Mental Hospital, Hartwood, N.B.

1920. Key, Gordon James, M.B., Ch.B.Aberd., Assistant Medical Superintendent, Valkenburg Mental Hospital, Observatory Road, Cape Town, South Africa.

1923. el Kholy, Mohamed Kamel, M.R.C.S., L.R.C.P.Lond., D.P.M., Medico-Legal Department, Bab-el-Khalk, Cairo, Egypt.

1920. Kimber, William Joseph Teil, M.R.C.S., L.R.C.P.Lond., D.P.M., Medical Superintendent, Herts County Mental Hospital, Hill End, St. Albans. (*Secretary, Educational Committee since* 1927.)

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1903. King, Frank Raymond, B.A.Camb., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Peckham House, Peckham, London, S.E. 15.
1902. King-Turner, Arthur Charles, M.B., C.M.Edin., Medical Superintendent, The Retreat, Fairford, Gloucestershire.
1915. Kirwan, Richard R., M.B., B.Ch.R.U.I., Assistant Medical Officer, West Riding Mental Hospital, Menston, Leeds.
1919. Knight, Mary Reid, M.A., M.B., Ch.B.Glasg., Assistant Medical Officer, Paisley Mental Hospital, Riccartsbar, N.B.

1914. Ladell, Robert George Macdonald, M.B., Ch.B.Vict., Medical Officer, Ministry of Pensions, 395, Coventry Road, Small Heath, Birmingham.
1923. Laing, John Kidd Collier, M.B., B.S.Melb., D.P.M., Deputy Medical Superintendent, Colney Hatch Mental Hospital, New Southgate, London, N. 11.
1925. Landers, John Joseph, M.B., B.Ch.N.U.I., D.P.H., Medical Officer, H.M. Boys' Prison, Wandsworth, London, S.W. 18.
1896. Langdon-Down, Reginald L., M.A., M.B., B.Ch.Camb., Normansfield, Hampton Wick, Middlesex.
1919. Langton, Peregrine Stephen Brackenbury, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Royal Earlswood Institution, Redhill, Surrey.
1925. Lascelles, William James, M.B., B.Ch.Belf., D.P.M., Assistant Medical Officer, Claybury Mental Hospital, Woodford Bridge, Essex.
1919. Latham, Oliver, M.B., C.M.Syd., Pathologist, Mental Hospitals Laboratory, Medical School, Newtown University, Sydney, N.S.W.
1898. Lavers, Norman, M.D.Brux., M.R.C.S., L.R.C.P.Lond., Dorset House, Clifton Down, Bristol.
1892. Lawless, George Robert, L.R.C.P., F.R.C.S.Irel., Medical Superintendent, District Asylum, Armagh.
1929. Laws, John Joseph, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Horton Mental Hospital, Epsom.
1915. Leech, Henry Brougham, B.A., M.D., B.Ch.Dubl., Deputy Medical Superintendent, Warwick County Mental Hospital, Hatton. (*Acting Registrar* 1923–24.)
1909. Leech, John Frederick Wolseley, B.A., M.D., B.Ch.Dubl., D.P.M., Assistant Medical Officer, Wilts County Mental Hospital, Devizes.
1899. Leeper, Richard R., L.R.C.P., F.R.C.S.Irel., M.P.C., Medical Superintendent, St. Patrick's Hospital, Dublin. (*Secretary, Irish Division*, 1911–29, *and Chairman since* 1929.)
1906. Leggett, William, B.A., M.D., B.Ch.Dubl., Medical Officer, Smithson Mental Hospital, Greenock.
1927. Levinson, Reuben, M.B., Ch.B.Edin., D.P.H., D.P.M., Assistant Medical Officer, West Ham Mental Hospital, Goodmayes, Essex.
1916. Lewis, Edward, F.R.F.P.S.Glasg., L.R.C.P.&S.Edin., Medical Superintendent, Drymma Hall, Skewen, near Neath.
1924. Lewis, John Biddulph Strafford, M.A.Camb., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Colney Hatch Mental Hospital, New Southgate, London, N. 11.
1920. Lilly, George Austen, *M.C.*, M.A., M.D.Camb., M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Banstead Mental Hospital, Sutton, Surrey.
1927. Lindsay, Thomas, M.D., F.R.C.S.Edin., D.P.M., Medical Superintendent, Caterham Mental Hospital; The Pines, Caterham, Surrey.
1908. Littlejohn, Edward Salterne, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Manor Certified Institution, Epsom.
1925. Littlejohn, Mary Victoria, M.B., Ch.B.Aberd., D.P.M., 17, Warwick Place, Leamington.
1921. Livesay, Arthur William Bligh, M.B., C.M., F.R.C.S.Edin., Assistant Medical Officer, St. Andrew's Hospital, Thorpe, Norwich.

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1922. Logan, Frederick Colquhoun, M.B., Ch.B., F.R.F.P.S.Glasg., Deputy Medical Superintendent, Lancashire County Mental Hospital, Prestwich, Manchester.

1898. Lord, John Robert, *C.B.E.*, M.D., C.M., F.R.C.P.Edin., Medical Superintendent, Horton Mental Hospital, Epsom; Horton House, Epsom. (*Assistant Editor*, 1900–11, and *Co-Editor of Journal since* 1911.) (*Secretary, Post-Graduate Study Committee*, 1920–26.) (*Chairman, Research and Clinical Committee since* 1927.) (PRESIDENT, 1926–27.) (Lect. on Clin. Psychiat. Lond. Sch. Med., Women.)

1924. Lornie, Peter, M.D., Ch.B.Edin., Senior Assistant Medical Officer, Monmouth County Mental Hospital, Abergavenny.

1924. Lothian, Douglas B. M., M.B., Ch.B.Edin., D.P.M., Assistant Medical Officer, Rampton State Institution, Retford; Loanstone House, Penicuik, Midlothian.

1929. Love, Gwyneth Duncan, M.B., Ch.B.Edin., Assistant Physician, Bootham Park, York.

1923. Lovell, Clement, M.D., B.S.Lond., Pathologist, Bethlem Royal Hospital, London, S.E. 1.

1928. Lowson, William, M.B., Ch.B.St. Andr., Medical Officer, Moat House, Tamworth; 9, Colehill, Tamworth, Staffordshire.

1906. Lowry, James Arthur, M.D., B.Ch.R.U.I., Medical Superintendent, Surrey County Mental Hospital, Brookwood.

1926. Lucas, Edmund Stanley Sayer, M.R.C.S., L.R.C.P.Lond., I.M.S., c o Grindlay & Co., Bombay, India.

1926. Lucas, Rosalie Evelyn, M.B., Ch.B.Brist., M.R.C.S., L.R.C.P.Lond., Assistant Psychiatrist, Child Guidance Centre, Tudor Lodge, Canonbury Place, London, N. 1.

1929. Luff, Mary Constance, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Research Worker, Medical Research Council; Clinical Assistant, Tavistock Clinic; 38, Langham Street, London, W. 1.

1923. Lynch, William Joseph, M.B., B.Ch.R.U.I., 430, First National Bank Building, Denver, Colorado, U.S.A.

1923. Lyon, Thomas Malcolm Murray, M.D., C.M.Edin., *J.P.*, 46, Palmerston Place, Edinburgh.

1920. McAlister, William Malcolm, M.A., M.B., Ch.B, M.R.C.P.Edin., Dipl. Psych., Deputy Physician-Superintendent, Royal Mental Hospital, Morningside, Edinburgh. (Lect. on Psychiat., Univ. of Edin.)

1906. Macarthur, John, M.R.C.S., L.R.C.P.Lond., D.P.M., Medical Superintendent, Lincoln County Mental Hospital, Bracebridge Heath.

1923. Macaulay, Douglas Ian Otto, M.D., Ch.B.Edin., D.P.M., Medical Superintendent, Chiswick House, Pinner, Middlesex.

1880. MacBryan, Henry Crawford, L.R.C.P.&S.Edin., Kingsdown House, Box, Wilts.

1926. MacCallum, Alexander Grigor, M.B., Ch.B.Glasg., 15, Woodbourne Avenue, Streatham, S.W. 16

1929. Maccallum, Archibald Montgomery, M.B., Ch.B.Glasg., Assistant Medical Officer, Ipswich Mental Hospital, Ipswich.

1929. MacCalman, Douglas Robert, M.B., Ch.B.Glasg., Assistant Medical Officer, Royal Asylum, Montrose.

1929. McCartan, William, M.D.Belf., D.P.H., D.P.M., Assistant Medical Officer, West Park Mental Hospital, Epsom.

1923. McCarthy, Owen Felix, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Resident Medical Superintendent, District Mental Hospital, Cork. (Lect. on Ment. Dis., Univ. Coll., Cork.)

1900. McClintock, John, L.R.C.P.&S.Edin., Resident Medical Superintendent, Grove House, Church Stretton, Salop.

1922. McCord, Robert Neil Ballagh, M.B., B.Ch.Belf., Senior Assistant Medical Officer, Surrey County Mental Hospital, Brookwood.

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1927. McCoull, George, M.B., B.S.Durh., L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Medical Officer, Prudhoe Hall Colony for Mental Defectives; Tyne View, Prudhoe-on-Tyne.

1920. McCowan, Peter Knight, M.D., Ch.B.Edin., M.R.C.P.Lond., D.P.M., Medical Superintendent, Cardiff City Mental Hospital, Whitchurch.

1921. McCutcheon, Archibald Munn, M.B., Ch.B., F.R.F.P.S.Glasg., Medical Superintendent, Monyhull Colony, King's Heath, Birmingham.

1901. MacDonald, James Hogg, M.B., Ch.B., F.R.F.P.S.Glasg., Medical Superintendent, Govan District Asylum, Hawkhead, Cardonald, Glasgow. (Lect. on Psychol. Med., Univ. of Glasgow.)

1884. MacDonald, P. W., M.D., C.M.Aberd., *J.P.*, Grasmere, Radipole, Weymouth. (*First Secretary, S.W. Division*, 1894–1905.) (PRESIDENT 1907–8.)

1911. MacDonald, Ranald, *O.B.E.*, M.D., Ch.B.Edin., D.P.M., Medical Superintendent, Coton Hill Mental Hospital, Stafford.

1928. Macdonald, Robert William, M.B., Ch.B.Glasg., Medical Officer, Ministry of Pensions, Kirkburton, Huddersfield.

1905. MacDonald, William Fraser, M.B., Ch.B.Edin., M.P.C., Olive Lodge, Polworth Terrace, Edinburgh.

1905. McDougall, Alan, M.D., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., Medical Director, The David Lewis Colony, Warford, Alderley Edge, Cheshire.

1928. McDougall, John, M.B., Ch.B.Glasg., Senior Assistant Physician, Crichton Royal, Dumfries.

1906. McDowall, Colin Francis Frederick, M.D., B.S.Durh., M.R.C.S., L.R.C.P. Lond., Medical Superintendent, Ticehurst House, Ticehurst, Sussex. (*Secretary, Library Committee since* 1922.)

1870. McDowall, Thomas W., M.D., L.R.C.S.Edin., "Burwood," Wadhurst, Sussex. (PRESIDENT, 1897–8.)

1895. Macfarlane, Neil M., *C.B.E.*, M.D., C.M.Aberd., Principal Medical Officer, Maseru, Basutoland; 565, West Street, Durban, Natal, South Africa.

1924. Macfarlane, Robert Melvin, M.B., Ch.B.Edin., D.P.M., Assistant Medical Officer, West Ham Mental Hospital, Goodmayes, Essex.

1923. McGarvey, John, M.B., B.Ch.Belf., D.P.M., Medical Superintendent, Somerset and Bath Mental Hospital, Wells.

1922. McGeorge, Margaret Turner, M.B., Ch.B.Glasg., Assistant Medical Officer, Camberwell House, Peckham Road, London, S.E. 5.

1928. MacGilp, Finlay Duncan, M.B., Ch.B.St. Andr., Assistant Medical Officer, Durham County Mental Hospital, Winterton, Ferryhill, co. Durham.

1925. McGlashan, William Reid, M.A., M.B., Ch.B.Aberd., D.P.M., Deputy Medical Superintendent, Derby County Mental Hospital, Mickleover.

1925. MacGowan, Agnes Mildred, M.B., Ch.B.Edin., D.P.M., Assistant Medical Officer and Pathologist, Bangour Village, Uphall, Linlithgowshire.

1929. McGrath, Annie Margaret, B.C., M.R.C.S., L.R.C.P., Pathologist, Herts County Mental Hospital, Hill End, St. Albans.

1921. McGrath, Mathew Joseph, M.B., B.Ch.R.U.I., D.P.M., Deputy Medical Superintendent, West Riding Mental Hospital; Gortmore, Bar Lane, Stanley, nr. Wakefield.

1902. McGregor, John, M.B., Ch.B.Edin., Senior Assistant Medical Officer, Glamorgan County Mental Hospital, Bridgend.

1924. McInnes, John, M.B., Ch.B.Glasg., D.P.M., Assistant Medical Officer, City Mental Hospital, Willerby, Hull.

1921. McKail, Robert Buchanan Forbes, M.B., Ch.B.Glasg., Deputy Medical Superintendent, Calderstones Certified Institution, Whalley, near Blackburn.

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1924. Mackay, George William John, M.B., Ch.B.Edin., D.P.M., Assistant Medical Officer, City Mental Hospital, Nottingham.

1929. MacKay, John, M.B., Ch.B.Glasg., Assistant Medical Officer, Cheadle Royal, Cheadle, Cheshire.

1914. Mackay, Magnus Ross, *M.C.*, M.B., Ch.B.Edin., Medical Superintendent, Newport Borough Mental Hospital, Caerleon, Mon.

1891. Mackenzie, Henry James, M.B., C.M.Edin., M.P.C., 254, Bishopsthorpe Road, York.

1927. Mackenzie, Ivy, M.A., B.Sc., M.D., F.R.F.P.S.Glasg., Consulting Physician, Glasgow District Board of Control; 10, Woodside Terrace, Glasgow, C. 3.

1911. Mackenzie, John Cosserat, M.B., Ch.B.Edin., Assistant Medical Officer, Stafford Mental Hospital, Burntwood, Lichfield.

1926. Mackenzie, John Muir, M.B., Ch.B.Glasg., D.P.M., Assistant Medical Officer, Rubery Hill Mental Hospital, Northfield, Birmingham.

1927. Mackenzie, Murdo, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Senior Assistant Physician, Bethlem Royal Hospital, London, S.E. 1.

1903. Mackenzie, Theodore Charles, M.D., Ch.B., F.R.C.P.Edin., M.P.C., Medical Superintendent, District Asylum, Inverness.

1921. Mackie, George, *D.S.O.*, M.D., Ch.B.Edin., Thornyhill, Abbey Road, Great Malvern.

1924. McLagan, Francis M., M.B., Ch.B.St.Andr., D.P.M., c o D.M.S.S., Accra, Gold Coast, West Africa.

1926. McLaren, Mary Evelyn, M.B., Ch.B.Edin., Dipl. Psych., Assistant Physician, Royal Mental Hospital, Morningside, Edinburgh.

1927. Macleod, John, M.B., Ch.B.Edin., Assistant Medical Officer Glasgow, District Mental Hospital, Woodilee, Lenzie, N.B.

1921. Macleod, Neil, M.D.Edin., D.P.M., Medical Superintendent, The Retreat, York.

1925. McManus, Hugh Charles, M.B., Ch.B.Vict., D.P.M., The Hall, Wedmore, Somerset.

1929. Macmillan, Duncan, B.Sc., M.D.Edin., Assistant Physician, Crichton Royal Institution, Dumfries.

1904. Macnamara, Eric Danvers, M.A., M.D., B.Ch.Camb., F.R.C.P.Lond., 87, Harley Street, London, W. 1. (Lect. on Psychol. Med., Char. Cross Hosp.)

1925. MacNiven, Angus, M.B., Ch.B.Glasg., M.R.C.P.Edin., D.P.M., Assistant Physician, Royal Mental Hospital, Morningside, Edinburgh.

1910. MacPhail, Hector Duncan, *O.B.E.*, M.A., M.D., Ch.B.Edin., Medical Superintendent, City Mental Hospital, Gosforth, Newcastle-upon-Tyne. (Lect. on Psychol. Med., Univ. of Durh.)

1922. Macphail, Iain Ross, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Greylees, Sleaford, Lincs.

1882. Macphail, Samuel Rutherford, M.D., C.M.Edin., 11, Dryden Place, Edinburgh.

1901. McRae, Douglas, M.D., C.M., F.R.C.P.Edin., *J.P.*, Medical Superintendent, Glengall Hospital; Glengall House, Ayr, N.B. (*Assistant Editor* 1915–20; *Co-Editor of the Journal since* 1920.)

1922. McWilliam, William, M.D., Ch.B., F.R.F.P.S.Glasg., D.P.M., Senior Assistant Medical Officer, District Asylum, Inverness.

1925. Madgwick, John Reginald Alexander, M.B., B.S., M.R.C.S., L.R.C.P. Lond., D.P.M., Assistant Medical Officer, Long Grove Mental Hospital, Epsom, Surrey.

1923. Madill, Joseph Thomas Herbert, B.A.N.U.I., M.B., B.Ch.Edin., F.R.F.P.S.Glasg., D.P.M., M.P.C., Medical Superintendent, Cumberland and Westmorland Mental Hospital, Carlisle.

1929. Mahony, Elizabeth Maud, M.B., Ch.B., B.A.O.N.U.I., Assistant Medical Officer, Mental Hospital, Monaghan, Ireland.

1928. Main, Dorothy Mary, M.B., Ch.B.Glasg., Assistant Medical Officer, City Mental Hospital, Willerby, Hull.

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1908. Mapother, Edward, M.D., B.S.Lond., F.R.C.P.Lond., F.R.C.S.Eng., Medical Superintendent, The Maudsley Hospital, Denmark Hill, London, S.E. 5. (Lect. in Psych. Med., King's Coll. Hosp.)

1903. Marnan, John, B.A., M.B., B.Ch.Dubl., Medical Superintendent, County Mental Hospitals, Barnwood, Gloucester.

1896. Marr, Hamilton, M.D., C.M., F.R.F.P.S.Glasg., M.P.C., Commissioner, General Board of Control for Scotland; 10, Succoth Avenue, Edinburgh. (*Secretary, Scottish Division*, 1907–10.) (PRESIDENT, 1927–28.)

1929. Marsh, Rex Godfrey Blake, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Claybury Mental Hospital, Woodford Bridge, Essex.

1926. Martin, Alexander Reid, M.B., B.Ch.Belf., D.P.M., Assistant Physician, Sheppard and Pratt Hospital, Townson, Baltimore, Md., U.S.A.

1922. Martin, Frederick Robertson, M.D., Ch.B.Glasg., D.P.M., c/o Mental Hospitals Department, Wellington, New Zealand.

1896. Martin, James Charles, L.R.C.S.&P.Irel., *J.P.*, Medical Superintendent, District Mental Hospital, Letterkenny, Donegal.

1907. Martin, Mary Edith, L.S.A., L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., M.P.C., 11, The Drive, Hove, Sussex.

1914. Martin, Samuel Edgar, M.B., B.Ch.Edin., Barrister-at-Law, Medical Superintendent, The Old Manor, Salisbury.

1911. Martin, William Lewis, *O.B.E.*, M.A., B.Sc., M.B., C.M.Edin., D.P.H., Dipl. Psych., M.P.C., Certifying Physician in Lunacy, Edinburgh Parish Council; 56, Bruntsfield Place, Edinburgh.

1921. Masefield, William Gordon, M.R.C.S., L.R.C.P.Lond., D.P.M., Medical Superintendent, Essex County Mental Hospital, Brentwood.

1911. Mathieson, James Moir, M.B., Ch.B.Aberd., Assistant Medical Officer, South Yorks Mental Hospital, Wadsley, Sheffield.

1926. May, George Francis, M.D., C.M.McGill, L.M.S.S.A., Medical Superintendent, Durham County Mental Hospital, Winterton, Ferry-Hill.

1926. Menzies, Duncan, M.A., M.B., Ch.B.Aberd., D.P.M., Assistant Medical Officer, Somerset and Bath Mental Hospital, Wells.

1890. Menzies, William F., B.Sc., M.D., C.M.Edin., F.R.C.P.Lond., Medical Superintendent, Stafford County Mental Hospital, Cheddleton, Leek. (PRESIDENT, 1920–21.)

1877. Merson, John, M.A., M.D., C.M.Aberd., Willerby, Brayton Road, Selby.

1910. Middlemiss, James Ernest, F.R.F.P.S.Glasg., M.R.C.S., L.R.C.P. Lond., M.P.C., Neurologist and Specialist in Psychotherapy, Ministry of Pensions; "The Crest," Scott Hall Road, Chapel-Allerton, Leeds.

1928. Mill, Laura Margaret Dorothea, M.B., Ch.B.Glasg., Health Office, 23 Montrose Street, Glasgow.

1929. Miller, Emanuel, M.A.Camb., M.R.C.S., L.R.C.P.Lond., D.P.M., Neurological Specialist, Ministry of Pensions; 28, Wimpole Street, London, W. 1.

1925. Miller, Josephine Alcorn Carson, L.R.C.P.&S.Irel., Oxhey Grove, Hatch End, Middlesex.

1924. Miller, Robert Stewart, M.D., Ch.B.Glasg., Director, Khanka Mental Hospital, Cairo, Egypt.

1893. Mills, John, M.B., B.Ch.R.U.I., D.M.D., Medical Superintendent, District Mental Asylum, Ballinasloe, Ireland.

1923. Minski, Louis, M.D., B.S.Durh., M.R.C.P.Lond., D.P.M., 6, Minster Road, Shoot-up-Hill, London, N.W. 2.

1922. Molony, Charles Bernard, M.B., Ch.B.N.U.I., Assistant Medical Officer, District Mental Hospital, Limerick.

1910. Monnington, Richard Caldicott, M.D., Ch.B.Edin., D.P.H., D.P.M., Neurologist, Ministry of Pensions; 33, New Street, Salisbury.

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1915. Monrad-Krohn, G. H., B.A., M.D., B.S.Oslo, F.R.C.P.Lond., M.R.C.S. Eng., M.P.C., Rikshospitalet, Oslo, Norway. (Prof. of Med., Royal Frederick University, Oslo.)

1925. Moran, Patrick, M.B., B.Ch.Belf., D.P.M., Assistant Medical Officer, District Mental Hospital, Mullingar.

1917. Morris, Bedlington Howel, M.B., B.S.Durh., Inspector-General of Hospitals, South Australia; "Tros-y-Parc," Pembroke Street, St. Peter's, Adelaide, South Australia.

1925. Morris, John Vincent, M.B., B.Ch.Dubl., Assistant Medical Officer, St. Andrew's Hospital, Thorpe, Norwich.

1896. Mould, Gilbert Edward, M.R.C.S., L.R.C.P.Lond., The Grange, Rotherham, Yorks.

1927. Moulson, Norman, M.D., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Severalls Mental Hospital, Colchester.

1914. Moyes, John Murray, M.B., Ch.B.Edin., D.P.M., The Brook Villa, Liverpool, E.

1919. Mules, Annie Shortridge, M.R.C.S., L.R.C.P.Lond., Court Hall, Kenton, South Devon.

1907. Mules, Bertha Mary, M.D., B.S.Durh., Court Hall, Kenton, South Devon.

1929. Mullin, Bartholomew Joseph, *M.C.*, L.R.C.P.&S.Irel., D.P.H., D.P.M., Deputy Medical Superintendent, Wonford House Hospital, Exeter.

1911. Muncaster, Anna Lilian, M.B., Ch.B.Edin., Mental Hospital, Bloemfontein, South Africa.

1929. Munro, Thomas Arthur, M.B., Ch.B., Dipl. Psych., Assistant Physician (Temporary), Royal Edinburgh Hospital for Mental and Nervous Disorders, Craig House, Edinburgh.

1925. Murdoch, James Wilson, M.B., Ch.B.Aberd., Assistant Medical Officer, Central Mental Hospital, Tanjong Rambutan, Perak, Federated Malay States.

1929. Muthiah, Asainayagam Richard, L.M.S.Singapore, Assistant Physician, Central Mental Hospital, Tanjong Rambutan, Perak, Federated Malay States.

1903. Navarra, Norman, M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, City of London Mental Hospital, Stone, Dartford.

1910. Neill, Alex. William, M.D., Ch.B.Edin., Physician-Superintendent, Warneford House, Oxford.

1903. Nelis, William F., M.D.Durh., L.R.C.P.Edin., L.R.F.P.S.Glasg., The Chalet, New Road, Teignmouth.

1920. Nicol, William Drew, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Horton Mental Hospital, Epsom.

1923. Nicole, J. Ernest, L.M.S.S.A., D.P.M., Senior Assistant Medical Officer, Lancashire County Mental Hospital, Winwick, Warrington.

1923. Nicoll, James, M.D., C.M.Edin., D.P.H., Medical Superintendent, Fountain Children's Mental Hospital, Tooting Grove, London, S.W. 17.

1869. Nicolson, David, *C.B.*, LL.D., M.D., C.M.Aberd., M.R.C.P.Edin., Hanley, Park Road, Camberley, Surrey. (PRESIDENT, 1895–6.)

1920. Nix, Sidney, M.D., B.S.Durh., L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Deputy Medical Superintendent, Graylingwell Mental Hospital, Chichester.

1922. Noble, Ralph Athelstane, M.B., Ch.M.Syd., D.P.M., Hon. Physician, Psychiatric Clinic, Royal Prince Alfred Hospital, Sydney, Australia; "Montrose," 143, Macquarie Street, Sydney, N.S.W., Australia.

1888. Nolan, Michael James, L.R.C.P.&S.Irel., M.P.C., *J.P.*, Medical Superintendent, Down County Mental Hospital, Downpatrick. Consulting Visitor-in-Lunacy to the Lord Chief Justice, N. Ireland, and to the Chief Justice, Irish Free State. (PRESIDENT, 1924–25.)

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1909. Norman, Hubert James, M.B., Ch.B.Edin., D.P.H., Medical Superintendent, Camberwell House Mental Hospital, Peckham Road, London, S.E. 5; Northcotes, 79, West Hill, Sydenham, London, S.E. 26. (Lect. on Ment. Dis., Westm. Hosp.)

1923. Noronha, Frank, M.B., C.M.Madras, D.P.M., Superintendent, Mental Hospital, Bangalore City, India.

1926. Northcote, Muriel L. M., M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, City Mental Hospital, Whitchurch, Cardiff.

1929. O'Connell, Daniel Joseph, M.B., B.Ch.N.U.I., D.P.M., Assistant Medical Officer, St. Andrew's Hospital, Northampton.

1924. Odlum, Doris Maude, M.A.Oxon., B.A.Lond., M.R.C.S., L.R.C.P.Lond., D.P.M., 42, Harley Street, London, W. 1.

1918. Ogilvie, William Mitchell, M.B., C.M.Aberd., Medical Superintendent, City Mental Hospital, Ipswich.

1901. Ogilvy, David, B.A., M.D., B.Ch.Dubl., Medical Superintendent, Long Grove Mental Hospital, Epsom.

1911. Oliver, Norman Henry, M.R.C.S., L.R.C.P.Lond., Barrister-at-Law, Medical Superintendent, Ministry of Pensions Hospital; Latchmere, Ham Common, Surrey.

1922. O'Flaherty, Very Rev. Claude, M.B., Ch.B.Edin., The College, Millport, Buteshire.

1920. O'Neill, Arthur, *O.B.E.*, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Napsbury Mental Hospital, St. Albans, Herts.

1924. O'Reilly, James Joseph, M.B., B.Ch.Belf., D.P.M., Assistant Medical Officer, Park Prewett Mental Hospital, Basingstoke.

1902. Orr, David, M.D., C.M.Edin., M.P.C., 88, Thirlestane Road, Edinburgh.

1910. Orr, James Henry Cubitt, M.D., Ch.B.Edin., Medical Superintendent, Midlothian and Peebles Asylum, Rosslyn Castle.

1916. Overbeck-Wright, Alexander William, M.D., Ch.B.Aberd., D.P.H., M.P.C., Lt.-Col. *I.M.S.*, Superintendent, Asylum House, Agra, U.P., India. *Address:* c/o Messrs. King, King & Co., Bombay, India.

1928. Paddle, Kenneth Cecil Laurence, *M.C.*, M.R.C.S., L.R.C.P.Lond., D.P.M., Senior Assistant Medical Officer, Caterham Mental Hospital, Caterham, Surrey.

1905. Paine, Frederick, M.D.Brux., M.R.C.P.Lond., M.R.C.S.Eng., D.P.M., Deputy Medical Superintendent, Claybury Mental Hospital, Woodford Bridge, Essex.

1927. Pal, Sachindra Bhushan, B.A., L.M.S.Calc., Senior Assistant Physician, Central Mental Hospital, Tanjong Rambutan, Federated Malay States.

1927. Parasuram, Govindarajpuram Rampattar, B.A., L.M.S Madras, M.R.C.P.Edin., Deputy Medical Superintendent, Government Mental Hospital, Madras.

1920. Parkin, George Gray, M.D., Ch.B.Vict., Deputy Medical Superintendent, Cheshire County Mental Hospital, Parkside, Macclesfield.

1920. Parnis, Henry William, B.Sc., M.D.Malta, M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Bexley Mental Hospital, Bexley, Kent.

1916. Patch, Charles James Lodge, *M.C.*, L.R.C.P.& S.Edin., L.R.F.P.S., Glasg., Capt. *I.M.S.*, 8, Jail Road, Lahore, India.

1899. Patrick, John, M.B., Ch.B.R.U.I., Medical Superintendent, District Asylum, Omagh.

1929. Paterson, Arthur Spencer, B.A.Oxon., M.B., Ch.B.Edin., 39, George Square, Edinburgh.

1928. Patterson, Edward Cecil, M.B., B.Ch.Belf., Assistant Medical Officer, Devon Mental Hospital, Exminster.

1907. Peachell, George Ernest, M.D., B.S., M.R.C.S., L.R.C.P.Lond., M.P.C., Whitechurch, Blandford.

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1929. Pearce, John Dalziel Wyndham, M.A., M.B., Ch.B.Edin., Assistant Medical Officer, Kent County Mental Hospital, Chartham Down, near Canterbury.

1920. Pearn, Oscar Phillips Napier, L.S.A., M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Cane Hill Mental Hospital, Coulsdon, Surrey.

1913. Penny, Robert Augustus Greenwood, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Devon County Mental Hospital, Exminster.

1927. Perera, Clement Osmund, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Superintendent, Mental Hospital, Angoda, Ceylon.

1928. Perk, David, M.B., Ch.B.Leeds, Junior Assistant Medical Officer, West Riding Mental Hospital, Menston, near Leeds.

1929. Peters, Gordon Frank, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Horton Mental Hospital, Epsom, Surrey.

1911. Petrie, Alfred Alexander Webster, M.D., B.S., M.R.C.P.Lond., F.R.C.S. Edin., D.P.M., Medical Superintendent, Banstead Mental Hospital, Sutton, Surrey. (Lect. on Ment. Dis., West Lond. Post-Grad. College.)

1908. Phillips, John George Porter, M.D., B.S., M.R.C.S., F.R.C.P.Lond., M.P.C., Resident Physician - Superintendent, Bethlem Royal Hospital, London, S.E. 1. (*Secretary, Educational Committee*, 1913–20.) (Lect. on Ment. Dis., Bart.'s Hosp. and Lond. Sch. of Med. for Women.)

1910. Phillips, John Robert Parry, *O.B.E.*, M.R.C.S., L.R.C.P.Lond., Kingsdown House, Box, Wilts.

1906. Phillips, Nathaniel Richard, M.D.Brux., M.R.C.S., L.R.C.P.Lond., D.P.M., Medical Superintendent, Monmouth County Mental Hospital, Abergavenny.

1905. Phillips, Norman Routh, M.D.Brux., M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, St. Andrew's Hospital, Northampton.

1921. Phillips, Philip Gordon, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Bryn, The Avenue, Collingham, Leeds.

1924. Pickworth, Frederick Alfred, B.Sc., M.B., B.S., M.R.C.S., L.R.C.P.Lond., A.I.C.(exam.), Ph.C., Director, Joint Board of Research for Mental Diseases, City and University of Birmingham; Hollymoor Mental Hospital, Northfield, Birmingham.

1891. Pierce, Bedford, M.D., F.R.C.P.Lond., "Bankcroft," Douglas Road, Harpenden, Herts. (*Secretary, N. and M. Division*, 1900–8.) (PRESIDENT, 1919–20.)

1888. Pietersen, James F. G., M.R.C.S., L.R.C.P.Lond., Ashwood House, Kingswinford, near Dudley, Stafford.

1896. Planck, Charles, M.A.Camb., M.R.C.S., L.R.C.P.Lond., "Pontresina," Perrymount Road, Haywards Heath, Sussex.

1912. Plummer, Edgar Curnow, M.R.C.S., L.R.C.P.Lond., 113, Park Road, Hanover Gate, London, N.W. 8.

1889. Pope, George Stevens, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Medical Superintendent, Heigham Hall, Norwich.

1927. Porteous, Harold Burnet, M.B., Ch.B.Edin., D.P.H., D.P.M., Wing-Cdr. *R.A.F.*; Air Headquarters, Valletta, Malta.

1913. Potts, William A., M.A.Camb., M.D.Edin.& Birm., M.R.C.S., L.R.C.P. Lond., Medical Officer, Birmingham Committee for the Care of the Feeble-Minded; 118, Hagley Road, Egbaston, Birmingham.

1923. Power, Thomas Declan, B.A., M.D., B.Ch.Dubl., M.R.C.P.Lond., D.P.H., D.P.M., Assistant Medical Officer, Essex County Mental Hospital, Brentwood.

1921. Poynder, Ernest George Thornton, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Long Grove Mental Hospital, Epsom.

1918. Prideaux, Joseph Francis Engledue, M.R.C.S., L.R.C.P.Lond., D.C.M.S.; Ministry of Pensions, 1, Sanctuary Buildings, Great Smith Street, London, S.W. 1.

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1928. Quine, Margaret Annette, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Lancashire County Mental Hospital, Winwick, Warrington, Lancs.

1928. Raitt, William John, M.B., Ch.B.Aberd., Assistant Physician, Crichton Royal, Dumfries.

1894. Rambaut, Daniel F., M.A., M.D., B.Ch.Dubl., Medical Superintendent, St. Andrew's Hospital; Priory Cottage, Northampton. (*Registrar since* 1924.)

1889. Raw, Nathan, *C.M.G.*, M.D., B.S., M.R.C.P.Lond., F.R.C.S., F.R.S. Edin., L.S.Sc.Durh., M.P.C., Lord Chancellor's Visitor; 30, Clarendon Court, Maida Vale, London, W. 9. (*Chairman, Parliamentary Committee since* 1926.) (PRESIDENT, 1929–30.)

1913. Read, Charles Stanford, M.D., M.R.C.S., L.R.C.P.Lond., 22, Park Crescent, London, W. 1. (Lect. on Psychol. Med., Bethlem Royal Hospital.)

1920. Read, Walter Woolfe, M.D.Brux., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Berks County Mental Hospital, Moulsford, Wallingford.

1927. Rees, Rufus Price, M.R.C.S., L.R.C.P.Lond., D.P.M., Senior Assistant Medical Officer, Joint Counties Mental Hospital, Carmarthen.

1927. Rees, Thomas Percy, B.Sc., M.B., B.Ch.Wales, M.R.C.P.Lond., M.R.C.S. Eng., D.P.M., Senior Assistant Medical Officer, Croydon Mental Hospital, Upper Warlingham, Surrey.

1911. Reeve, Ernest Frederick, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Lancashire County Mental Hospital, Rainhill, nr. Liverpool. (Lect. on Ment. Dis., Univ. of Liverp.)

1911. Reid, Daniel McKinley, M.D., Ch.B., F.R.F.P.S.Glasg., Medical Superintendent, City Mental Hospital, Exeter.

1910. Reid, William, M.A.St.And., M.B., Ch.B.Edin., Medical Superintendent, Stafford Mental Hospital, Burntwood, Lichfield.

1923. Retallack-Moloney, Herbert Thomas, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Hanwell Mental Hospital, Southall.

1899. Rice, David, M.D.Brux., M.R.C.S., L.R.C.P.Lond., D.P.H., Medical Superintendent, City Mental Hospital, Hellesdon, Norwich.

1929. Rich, Gilbert J., A.B., A.M., Ph.D.Cornell, M.D.Chicago, Assistant Physician, Boston Psychopathic Hospital, Boston, Mass., U.S.A.

1897. Richard, William John, M.A., M.B., C.M., F.R.F.P.S.Glasg., Medical Superintendent, South General Hospital; Merryflats House, Govan, Glasgow.

1922. Riches, Reginald George, M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Hanwell Mental Hospital, Southall, Middlesex.

1920. Rickman, John, M.A., M.D., B.Ch.Camb., Chief Assistant, Mental Out-Patients, St. Thomas's Hospital; 37, Devonshire Place, London, W. 1.

1911. Robarts, Henry Howard, M.D., Ch.B.Edin., D.P.H., Medical Officer, East Lothian Mental Hospital, Ennerdale, Haddington, N.B.

1922. Robb, John Robert Beith, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Assistant Physician, Glasgow District Mental Hospital, Gartloch, Gartcosh, N.B.

1921. Roberts, Edward Douglas Thomas, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Herts County Mental Hospital, Hill End, St. Albans.

1903. Roberts, Norcliffe, *O.B.E.*, M.D., B.S.Durh., D.P.M., Medical Superintendent, West Park Mental Hospital, Epsom.

1927. Robertson, David, M.D., Ch.B.Glasg., Junior Assistant Physician, Bethlem Royal Hospital, Lambeth, London, S.E. 1.

1908. Robertson, George Dunlop, L.R.C.S.&P.Edin., L.R.F.P.S.Glasg., Dipl. Psych., Senior Assistant Physician, Lanark District Mental Hospital, Hartwood, N.B.

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1929. Robertson, James Andrew, M.B., Ch.B.Edin., Assistant Medical Officer, County Mental Hospital, Stafford.
1920. Robinson, William, M.D., Ch.B.Leeds, D.P.M., Medical Superintendent, City of London Mental Hospital, Stone, Dartford.
1922. Rodger, Kenneth Mann, M.B., Ch.B.Glasg., D.P.M., Deputy Medical Superintendent, Salop County Mental Hospital, Bicton Heath.
1914. Rodger, Murdoch Mann, M.D., Ch.B.Glasg., Dechmont, Helouan, Egypt.
1908. Rodgers, Frederick Millar, *O.B.E.*, M.D., Ch.B.Vict., D.P.H., Medical Superintendent, Lancashire County Mental Hospital, Winwick, Warrington.
1895. Rolleston, Lancelot William, *C.B.E.*, M.B., B.S.Durh., M.R.C.S., L.R.C.P. Lond., Queen Anne's Mansions, St. James's Park, London, S.W. 1.
1922. Rollins, Ernest Edward, B.A., M.B., B.Ch.Dubl., Resident Medical Officer, Brooke House, Upper Clapton, London, E. 5.
1924. Rose, Edward Snow, M.R.C.S. L.R.C.P.Lond., D.P.M., Lansdowne House, Romsey, Hants.
1888. Ross, Chisholm, M.D.Syd., M.B., C.M.Edin., 225, Macquarie Street, Sydney, New South Wales.
1910. Ross, Donald, M.B., Ch.B., M.R.C.P.Edin., M.P.C., *J.P.*, Medical Superintendent, Argyll and Bute Asylum; Tigh-na-Linne, Lochgilphead, Argyll. (*Vice-Chairman, Educational Committee since* 1927.)
1923. Ross, Thomas Arthur, M.D., C.M., F.R.C.P.Edin., Medical Director, Cassel Hospital, Swaylands, Penshurst, Kent.
1899. Rotherham, Arthur, M.A., M.B., B.Ch.Camb., Commissioner, Board of Control, Caxton House West, Westminster, S.W. 1; Elm House, Marshall Road, Farncombe, Surrey.
1922. Roy, John Allen Chisholm, M.B., Ch.B.Vict., Medical Superintendent, Manchester Royal Hospital, Cheadle, Cheshire.
1924. Rudolf, Gerald de Montjoie, M.R.C.S., L.R.C.P.Lond., D.P.H., D.P.M., Senior Assistant Medical Officer, Leavesden Mental Hospital, Abbott's Langley, Herts.
1929. Russell, David, M.B., Ch.B.Glasg., Assistant Medical Officer, Straits Settlements Mental Hospital, Singapore.
1923. Russell, John, M.B., Ch.B.Glasg., D.P.M., Assistant Medical Officer, West Riding Mental Hospital, Menston, Leeds.
1912. Russell, John Ivisor, M.B., Ch.B., F.R.F.P.S.Glasg., D.P.M., M.P.C., Medical Superintendent, North Riding Mental Hospital, Clifton, York. (*Secretary, N. and M. Division since* 1929.)
1915. Russell, William, *M.C.*, M.D., Ch.B.Edin., Dip.Psych., D.T.M., Physician Superintendent, Witrand Institution, Potchefstroom, South Africa.
1912. Rutherford, Cecil, B.A., M.B., B.Ch.Dubl., Assistant Medical Officer, Holloway Sanatorium, Virginia Water, Surrey.
1907. Rutherford, Henry Richard Charles, F.R.C.S., L.R.C.P.Irel., D.P.H., Medical Superintendent, Farnham House, Finglas, co. Dublin.
1896. Rutherford, James Mair, M.B., C.M., F.R.C.P.Edin., M.P.C., Brislington House, Bristol.
1922. Ruthven, Morton Wood, M.B., Ch.B.Edin., D.T.M., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.

1902. Sall, Ernest Frederick, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, City Mental Hospital, Canterbury.
1908. Samuels, William Frederick, L.M., L.Ch.Dubl., Medical Superintendent, Central Mental Hospital; St. Dymphna's, Tanjong Rambutan, Perak, Federated Malay States.
1923. Sang, Janet Adeline Agnes, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Assistant Medical Officer, Lancashire County Mental Hospital, Prestwich, Manchester.
1894. Sankey, Edward Hugh Octavius, M.A., M.B., B.Ch.Camb., Resident Medical Licensee, Boreatton Park, Baschurch, Salop.
1906. Scanlan, John James, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., D.P.H., Imperial Chambers, Cursitor Street, London, E.C. 4.

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1928. Scholberg, Harold Alfred, M.B., M.R.C.S., L.R.C.P.Lond., D.P.H., 3, St. Andrew's Crescent, Cardiff.

1926. Scoresby-Jackson, Margaret, M.D., B.S.Durh., Clinical Assistant, Neurological Department, Guy's Hospital; 28, Weymouth Street, Portland Place, London, W. 1.

1925. Scott, Francis Leonard, M.R.C.S., L.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Bracebridge Mental Hospital, Lincoln.

1911. Scroope, Gervace Wm. Mavy, M.B., B.Ch.Dubl., Assistant Medical Officer, Central Criminal Asylum, Dundrum, co. Dublin.

1880. Seccombe, George Samuel, M.R.C.S., L.R.C.P.Lond., c/o Lloyds Bank, Threadneedle Street, London, E.C. 3.

1925. Selkirk, Elizabeth Thompson, M.B., Ch.B.Edin , Deputy Medical Superintendent, Hollymoor Mental Hospital, Northfield, Birmingham.

1929. Selling, Lowell Sinn, B.A.Mich., M.A.Columbia, D.N.B., Sc.M.New York, M.D.Bellevue; Bellevue Hospital, New York, U.S.A.

1912. Sergeant, John Noel, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Newlands House, Tooting Bec Common, London, S.W. 17. (*Secretary, South-Eastern Division since* 1913.)

1925. Shand, George Ernest, M.D., Ch.B.Aberd., D.P.H., Deputy Medical Superintendent, Winson Green Mental Hospital, Birmingham; 307, Gillott Road, Edgbaston, Birmingham.

1901. Shaw, Benjamin Henry, M.D., B.Ch.R.U.I., Medical Superintendent, County Mental Hospital, Stafford. (*Secretary, Research and Clinical Committee since* 1927.)

1905. Shaw, Charles John, M.D., Ch.B., F.R.C.P.Edin., *J.P.*, Medical Superintendent, Royal Asylum, Montrose.

1904. Shaw, Patrick, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Medical Superintendent, Hospital for Insane, Ballarat, Victoria, Australia.

1909. Shaw, William Samuel Jagoe, M.D.Belf., M.B., B.Ch.R.U.I., Lt.-Col. *I.M.S.*, Calcote House, Sandicotes Road, Parkstone, Dorset.

1920. Shearer, Christina Hamilton, M.B., Ch.B.Glasg., Senior Medical Officer, Cassel's Hospital, Swaylands, Penshurst, Kent.

1928. Shepherd, Andrew, M.B., Ch.B.Glasg., D.P.M., Assistant Medical Officer, Hill End Mental Hospital, St. Albans, Herts.

1923. Shepherd, Charles Ernest Alan, M.R.C.S., L.R.C.P.Lond., D.P.M., Senior Assistant Medical Officer, Hants County Mental Hospital, Knowle, Fareham.

1927. Shera, Arthur Geoffrey, M.A., M.D., B.Ch.Camb., M.R.C.S., L.R.C.P. Lond., 10. Upperton Gardens, Eastbourne. (Pathologist to the Eastbourne Hospitals and to the East Sussex County Mental Hospital, Hellingly.)

1928. Sheridan, Alfred, L.R.C.P.&S.Irel., Resident Medical Superintendent, Mayo County Mental Hospital, Castlebar, Ireland.

1914. Sherlock, Edward Birchall, B.Sc., M.D.Lond., D.P.H., Barrister-at-Law, Medical Superintendent, Darenth Industrial Colony, Dartford.

1914. Shield, Hubert, *M.C.*, M.B., B.S.Durh., c/o Glyn, Mills & Co., 3, Whitehall Place, S.W. 1.

1929. Shilvock, William Henry, B.Sc., M.B., Ch.B.Birm., Assistant Medical Officer, Rubery Hill Mental Hospital, Birmingham.

1923. Shore, G. W., M.D.Lond., D.P.H., D.P.M., Assistant Medical Officer, Springfield Mental Hospital, nr. Tooting, London, S.W. 17.

1922. Shortt, Jane Elder, M.B., Ch.B.Glasg., Valleyfields, Alingdon, Lanarkshire.

1928. Silverston, Joseph Denzil, M.B., B.S.Durh., Deputy Medical Superintendent, County Mental Hospital, Lancaster.

1928. Sinclair, Arthur Crawford, M.D.Belf., D.P.M., Assistant Medical Officer, County Mental Hospital, Brentwood, Essex.

1891. Skeen, James Humphry, M.B., C.M.Aberd., M.P.C., Medical Superintendent, New Saughton Hall, Polton, Midlothian.

1921. Skene, Leslie Henderson, *M.C.*, M.B., Ch.B.Edin., Dipl.Psych., Medical Superintendent, Mental Hospital, Union Mills, Isle of Man.

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1925. Skottowe, James Stewart Ian, M.B., Ch.B.Glasg., D.P.M., Senior Assistant Medical Officer, City Mental Hospital, Whitchurch, Cardiff.

1914. Slaney, Chas. Newnham, M.R.C.S., L.R.C.P.Lond., Medical Officer's House, H.M. Borstal Institution, Feltham, Middlesex.

1901. Slater, George Nathan Oscroft, M.D., M.R.C.S., L.R.C.P.Lond., D.P.M., Senior Assistant Medical Officer, Essex County Mental Hospital, Brentwood.

1928. Smith, Arthur Wallace Herbert, M.R.C.S., L.R.C.P.Lond., Assistant Medical Superintendent, Central Mental Hospital, Tanjong Rambutan, Perak, Federated Malay States.

1910. Smith, Gayton Warwick, M.D.Lond., B.S.Durh., M.R.C.S., L.R.C.P. Lond., D.P.H., Senior Assistant Medical Officer, Springfield Mental Hospital, nr. Tooting, London, S.W. 17.

1905. Smith, George William, *O.B.E.*, M.B., Ch.B.Edin., Wyke House, Isleworth, Middlesex.

1926. Smith, Gordon John, M.B., Ch.B.Aberd., Assistant Physician, Royal Mental Hospital, Morningside, Edinburgh.

1923. Smith, Herbert, M.R.C.S., L.R.C.P.Lond., Deputy Medical Superintendent, Bristol Mental Hospital, Fishponds.

1899. Smith, John Grimmond, M.D., C.M.Edin., Medical Superintendent, Hereford County Mental Hospital, Burghill.

1920. Smith, Maurice Hamblin, M.A.Camb., M.D.Durh., M.R.C.S., L.R.C.P. Lond., Medical Officer, H.M. Prison, Birmingham. (Lect. on Crim., Univ. of Birm.)

1913. Smith, Thomas Cyril, M.B., Ch.B.Edin., Assistant Medical Officer, County Mental Hospital, Barnwood, Gloucester.

1921. Smyth, John Francis, M.D., B.Ch.N.U.I., D.P.M., 4, Portland Street, Leamington Spa.

1899. Smyth, Walter Samuel, M.B., B.Ch.R.U.I., Assistant Medical Superintendent, District Asylum, Antrim.

1926. Snell, Harvie Kennard, M.D., B.S., M.R.C.S., L.R.C.P.Lond., D.P.H., Medical Officer, H.M. Prison, Parkhurst; Camp Hill, Newport, Isle of Wight.

1923. Somerville, George, M.D., Ch.B.Edin., D.P.M., Senior Assistant Medical Officer, West Ham Mental Hospital, Goodmayes, Ilford.

1913. Somerville, Henry, B.Sc., M.R.C.S., L.R.C.P.Lond., F.C.S., Harrold, Bedford.

1885. Soutar, James Greig, M.B., C.M.Edin., M.P.C., 20, Royal Parade, Cheltenham. (PRESIDENT, 1912–13.) (*Chairman, South-Western Division since* 1929.)

1906. Spark, Percy Charles, M.R.C.S., L.R.C.P.Lond., 3, Clapham Mansions, Nightingale Lane, London, S.W. 4.

1925. Speer, James Millar Craig, M.B., B.Ch.Belf., Assistant Medical Officer, Wilts County Mental Hospital, Devizes.

1929. Spence, David Sheridan, B.A., M.B., B.Ch., B.A.O.Dubl., Assistant Medical Officer, Hereford County Mental Hospital, Burghill.

1922. Spence, Thomas Reginald Carwardine, *M.C.*, M.B., Ch.B.Edin., Assistant Physician, Royal Edinburgh Hospital for Mental Disorders, Morningside; 2, Morningside Terrace, Edinburgh. (Assistant in Psychiatry, Univ. of Edin.)

1891. Stansfield, Thomas Edward Knowles, *C.B.E.*, M.B., C.M.Edin., Costello Devachan, San Remo, Italy.

1901. Starkey, William, M.B., B.Ch.R.U.I., Medical Superintendent, Plymouth Mental Hospital, Blackadon, Ivybridge. (*Secretary, South-Western Division since* 1922.)

1928. Statham, Hugh, M.B., B.C.Camb., M.R.C.S., L.R.C.P.Lond., Physician for Nervous Diseases, Royal Victoria and West Hants Hospital; 31, Christchurch Road, Bournemouth.

1927. Steel, John P., M.D., Ch.B.Edin., Deputy Medical Superintendent, St. Luke's Hospital, Middlesbrough.

1925. Steel, Samuel Maxwell, M.B., Ch.B.Glasg., Assistant Medical Superintendent, Monyhull Colony, Kings Heath, Birmingham.

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1907. **Steele**, Patrick, M.D., Ch.B., F.R.C.P.Edin., Medical Superintendent, Roxburgh District Asylum; The Hermitage, Melrose.

1929. Stenhouse, Jack Fingland Martin, M.B., Ch.B.Glasg., D.P.M., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.

1929. Stephen, Adrian Leslie, B.A., M.B., B.S.Lond., Barrister-at-Law, Clinical Assistant, Maudsley Hospital, Denmark Hill, S.E. 5; 50, Gordon Square, W.C. 1.

1929. Stephen, Karin, M.A.Camb., M.R.C.S., L.R.C.P.Lond., 50, Gordon Square, W.C. 1.

1914. Stephens, Harold Freize, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Birmingham Certified Institution, Coles Hill, Warwickshire.

1909. Steward, Sidney John, *D.S.O.*, M.D., B.Ch.Camb., M.R.C.S., L.R.C.P. Lond., D.P.H., Langton Lodge, Farncombe, Surrey.

1922. **Stewart**, Francis Hugh, M.A., D.Sc.St.And., M.D., Ch.B.Edin., D.P.M., Major, *I.M.S.* (retired), Giza Memorial Laboratory, Cairo, Egypt.

1927. Stewart, Francis Melville, M.B., Ch.B.Edin., Second Assistant Medical Officer, County and City Mental Hospital, Littlemore, Oxford.

1887. **Stewart**, Rothsay Charles, L.S.A., M.R.C.S.Eng., Medical Superintendent, Leicester and Rutland County Mental Hospital, Narborough.

1914. Stewart, Roy MacKenzie, M.D., Ch.B., M.R.C.P.Edin., D.P.M., Medical Superintendent, Leavesden Mental Hospital; Woodside, Leavesden, Watford.

1905. Stilwell, Henry Francis, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Hayes Park, Hayes, Middlesex.

1899. Stilwell, Reginald John, M.R.C.S., L.R.C.P.Lond., Moorcroft House, Hillingdon, Middlesex.

1928. Stocks, Jane W., M.B., Ch.B.Glasg., Resident Medical Officer, Hollymoor Mental Hospital, Northfield, near Birmingham.

1897. Stoddart, William Henry Butter, M.D., B.S., F.R.C.P.Lond., M.R.C.S. Eng., M.P.C., Harcourt House, Cavendish Square, London, W. 1. (*Secretary, Educational Committee*, 1908–1912.)

1909. Stokes, Frederick Ernest, M.D., Ch.B.Glasg., D.P.H., Senior Assistant Medical Officer, City Mental Hospital, Milton, Portsmouth.

1903. Stratton, Percy Haughton, M.R.C.S., L.R.C.P.Lond., York Lodge, Cliff Cottage Road, Bournemouth.

1928. Strecker, Herbert A. J., M.D., M.S., Priv.-Doz. Ment. Dis. Univ. Würzb.; Hon. Research Appointment to the Joint Board of Research for Mental Diseases, City and University of Birmingham; Hollymoor Mental Hospital, Northfield, Birmingham.

1885. Street, Charles Tidbury, M.R.C.S., L.R.C.P.Lond., Kettlebury, Churt, Farnham, Surrey.

1929. Ström-Olsen, Rolf, B.Sc., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Derby Borough Mental Hospital, Rowditch.

1909. Stuart, Frederick Joshua, *O.B.E.*, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Northampton County Mental Hospital, Berry Wood.

1927. Stungo, Ellis, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg. 10, Marshalsea Road, Southwark, London, S.E. 1.

1924. Sturrock, Alexander Corsar, M.A., M.D., C.M.Edin., M.R.C.P.Lond., Preston House, Eccles, Manchester. (Physician, Salford Royal Hospital.)

1900. Sturrock, James Prain, M.A.St.And., M.D., C.M.Edin., Commissioner, General Board of Control for Scotland; 36, Murrayfield Road, Edinburgh.

1886. Suffern, Alex. Canning, *O.B.E.*, M.D., M.Ch.R.U.I., Glen-y-Mor, Hill Head, Fareham.

1921. Suffern, Canning, M.A., M.B., B.Ch.Camb., M.R.C.S., L.R.C.P.Lond., Glen-y-Mor, Hill Head, Fareham.

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1922. Sullivan, Patrick Daniel, F.R.C.S., L.R.C.P.Irel., Medical Superintendent, Verville Asylum, Clontarf, co. Dublin; 44, Harrington Street, Dublin

1918. Sutherland, Francis, M.B., Ch.B.Edin., D.P.H., Portree, Isle of Skye.

1919. Suttie, Ian D., M.B., Ch.B., F.R.F.P.S.Glasg., 27, Egerton Gardens, S.W. 3.

1928. Sykes, Elizabeth Sarah Marples, M.B., Ch.B.Sheff., Assistant Medical Officer, South Yorks Mental Hospital, Wadsley, Sheffield.

1928. Sykes, Kathleen Annie Harvey, M.D., B.S.Lond., M.B., Ch.B.Liverp., D.P.M., Assistant Medical Officer, Rubery Hill Mental Hospital, Northfield, Birmingham.

1908. Swift, Eric W. D., M.B.Lond., Physician-Superintendent, Valkenberg Mental Hospital, Observatory Cape Town, South Africa.

1926. Talbot, Geoffrey, B.Sc., M.B., Ch.B.Manch., Assistant Medical Officer, Lancashire County Mental Hospital, Prestwich, Manchester.

1923 Tattersall, Stanley Roy, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Lancashire County Mental Hospital, Lancaster.

1910 Taylor, Arthur Loudoun, B.Sc., M.B., Ch.B., F.R.C.P.Edin., Senior Assistant Medical Officer, Stafford County Mental Hospital, Burntwood, Lichfield.

1924. Taylor, Frederic Cecil Marsh, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Kent County Mental Hospital, Chartham Downs.

1897. Taylor, Frederic Ryott Percival, M.D., B.S., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, East Sussex County Mental Hospital, Hellingly. (*Chairman, Educational Committee since* 1927.)

1925. Taylor, Robert, L.R.C.P.&S.Irel., Assistant Medical Officer, St. Patrick's Hospital, Dublin.

1926. Tennent, Thomas, M.B., Ch.B.Glasg., D.P.H., D.P.M., Assistant Medical Officer, Maudsley Hospital, Denmark Hill, London, S.E. 5.

1921. Thomas, Cyril James, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Lancashire County Mental Hospital, Lancaster.

1920. Thomas, Frederic Percival Selwyn, M.D., Ch.B.Vict., The Oaks, Porthill, Staffordshire.

1908. Thomas, Joseph David, B.A., M.B., B.C.Camb., Northwoods House, Winterbourne, Bristol.

1911. Thomas, William Rees, M.D., B.S., M.R.C.S., M.R.C.P.Lond., D.P.M., M.P.C., Medical Superintendent, Rampton State Institution, near Retford, Notts; Gray Ridges, Woodbeck, Retford, Notts.

1925. Thompson, Robert, M.B., B.Ch.Belf., D.P.M., Senior Assistant Medical Officer, St. Patrick's Hospital, Dublin. (*Secretary, Irish Division, since* 1929.)

1921. Thomson, Aidan Gordon Wemyss, M.B., Ch.B.Glasg., Assistant Physician, Glasgow Royal Mental Hospital, Gartnavel.

1920. Thomson, William George, M.A., M.B., Ch.B.Aberd., D.P.H., D.P.M., Deputy Medical Superintendent, Manchester Royal Hospital, Cheadle, Cheshire.

1927. Thorpe, Frederick Thomas, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer and Pathologist, South Yorkshire Mental Hospital, Wadsley, Sheffield.

1914. Tisdall, Charles Jerome, M.B., Ch.B.Edin., Medical Superintendent, Shaftesbury House, Formby, Liverpool.

1903. Topham, J. Arthur, B.A.Camb., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Kent County Mental Hospital, Chartham Downs.

1896. Townsend, Arthur Allen Deykin, M.D., B.Ch.Birm., M.R.C.S., L.R.C.P. Lond., Medical Superintendent, Barnwood House, Gloucester.

1903. Tredgold, Alfred Frank, M.D.Durh., F.R.C.P.Lond., F.R.S.Edin., "St. Martin's," Guildford. (Lect. on Ment. Deficiency, London Univ.).

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1908. **Tuach-Mackenzie, William, M.D., Ch.B.Aberd., Physician-Superintendent, Royal and District Asylums, Dundee: Westgreen, Dundee. (Lect. on Ment. Dis., Univ. of St. Andrews.)**

1906. Turnbull, Peter Mortimer, *M.C.*, M.B., B.Ch.Aberd., D.P.M., Medical Superintendent, Tooting Bec Mental Hospital, S.W. 17.

1909. **Turnbull, Robert Cyril, M.D., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Essex County Mental Hospital, Severalls, Colchester.**

1906. **Turner, Frank Douglas, M.B., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Royal Eastern Counties Institution, Colchester.**

1922. Twomey, John Christopher, M.B., Ch.B.Liverp., D.P.H., Senior Assistant Physician, The Mental Hospital, Queenstown, Cape Province, South Africa; c/o Secretary for Interior, Pretoria.

1929. Umney, William Francis, M.D., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, The Flower House, Catford, S.E.6; Eardley House, 81, Lawrie Park Road, Sydenham, S.E. 26.

1922. **Viehoff, Herman Crowther, M.R.C.S., L.R.C.P.Lond., 48, Moor Lane, Great Crosby, Lancs.**

1894. **Vincent, William James N., *C.B.E.*, M.D., B.S.Durh., M.R.C.S.,** L.R.C.P.Lond., Medical Superintendent, South Yorkshire Mental Hospital, Wadsley, Sheffield. (Lect. on Ment. Dis., Univ. of Sheff.)

1923. **Wadsworth, George Reginald, M.B., B.Ch.Belf., Assistant Medical** Officer, Lancashire County Mental Hospital, Lancaster.

1928. Waldo, Henry Cecil, M.R.C.S., L.R.C.P.Lond., Barrister-at-Law, Medical Superintendent, Notts County Mental Hospital, Radcliffe-on-Trent, Notts.

1926. Walk, Alexander, M.D., B.S.Lond., D.P.M., Assistant Medical Officer, Long Grove Mental Hospital, Epsom. (*Assistant Editor of Journal since* 1928.)

1914. **Walker, Robert Clive, M.D., Ch.B.Edin., Deputy Medical Superin**tendent, West Riding Mental Hospital, Menston, Leeds.

1908. **Wallace, John Andrew Leslie, M.D., Ch.B.Edin., M.P.C., *J.P.*, Mental** Hospital, Callan Park, Sydney, New South Wales.

1912. **Wallace, Vivian, L.R.C.P.&S.Irel., D.P.H., Ballinakill, Multyfarnham, co. Westmeath.**

1928. Walsh, Michael A., L.R.C.P.&S.I., D.P.M., Assistant Medical Officer, District Mental Hospital, Portlaoighise (Maryborough), Co. Leix.

1889. Warnock, John, *C.M.G.*, B.Sc., M.D., C.M.Edin., M.R.C.S.Eng., The Limes, 181, London Road, Twickenham.

1927. Waterhouse, Amyas Theodore, M.A., M.D., B.Ch.Oxon., M.R.C.S., L.R.C.P.Lond., Hon. Physician, Neurological Department, Radcliffe Infirmary; 35, Beaumont Street, Oxford.

1895. **Waterston, Jane Elizabeth, M.D.Brux., F.R.C.P.Irel., L.R.C.S.Edin., M.P.C., Govt. Official Visitor, Valkenberg Mental Hospital, Cape Town; 85, Parliament Street, Cape Town, South Africa.**

1922. **Watson, Douglas Chalmers, M.D., F.R.C.P.Edin., 28, Melville Street,** Edinburgh. (Physician, Royal Infirmary, Edinburgh.)

1891. **Watson, George Alfred, M.B., C.M.Edin., M.P.C., Pathologist to the Lancashire County Mental Hospitals; Rainhill Cottage, Rainhill,** Nr. Liverpool. (Lect. on Neuro-Path. of Ment. Dis., Univ. of Liverp.)

1908. **Watson, Hugh Ferguson, M.D., Ch.B.Glasg., L.R.C.P.&S.Edin.,** L.R.F.P.S.Glasg., D.P.H., F.R.S.Edin., Deputy Commissioner, General Board of Control for Scotland; Northcote, Edinburgh Road, Perth.

1924. **Watson, John, *M.C.*, M.B., B.Ch.Edin., Resident Medical Superintendent, District Asylum, Londonderry.**

1929. Watt, Alexander Wilson, M.B., Ch.B.Glasg., Deputy Medical Superintendent, Cumberland and Westmorland Mental Hospital, Garlands, Carlisle.

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1911. **Webber, Leonard Mortis, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Surrey County Mental Hospital, Netherne, Coulsdon.**

1929. Weber, Hilda Marion, B.Sc., M.B., B.S.Lond., Clinical Assistant, London Clinic of Psycho-Analysis; 6, Taviton Street, London, W.C. 1.

1922. Webster, William Leckie, M.B., Ch.B.Edin., M.P.C., Major *R.A.M.C.*, R.A.M.C. Mess, The Mall, Rawal Pindi, India.

1919. **Westrup, Joseph Perceval, M.R.C.S., L.R.C.P.Lond., Medical Officer,** The Old Manor, Salisbury.

1911. **White, Edward Barton Cartwright, M.R.C.S., L.R.C.P.Lond., Medical** Superintendent, City Mental Hospital, Fishponds, Bristol. (Lect. on Ment. Dis., Univ. of Brist.)

1884. White, Ernest William, *C.B.E.*, M.B., L.S.A., M.R.C.S., M.R.C.P.Lond., "Fenstanton," Christchurch Road, S.W. 2; and Betley House, near Shrewsbury. (*Secretary, S.E. Division*, 1897–1900.) (*Chairman, Parliamentary Committee*, 1904–7.) (PRESIDENT 1903–4.)

1927. White, Mary Anne, M.B., B.Ch.Belf., D.P.M., Assistant Medical Officer, Portrane Mental Hospital, Donabate, co. Dublin.

1921. Whitelaw, William, M.B., B.Ch.Glasg., 3, Talbot Terrace, Scotstounhill, Renfrewshire.

1889. Whitwell, James Richard, M.B., C.M.Edin., 66, York Mansions, Battersea Park, S.W. 11. (*Acting Hon. Librarian and Chairman, Library Committee since 1927; Librarian since 1928.*)

1913. **Wilkins, William Douglas, M.B., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., D.P.M., Senior Assistant Medical Officer, Stafford County Mental** Hospital, Cheddleton, Leek.

1900. **Wilkinson, Harry Bacon, M.R.C.S., L.R.C.P.Lond., Deputy Medical** Superintendent, Plymouth Mental Hospital, Blackadon, Ivybridge, South Devon.

1929. Will, George Wishart, M.B., Ch.B.N.Z., M.P.C., Major *R.A.M.C.*, "D" Block, Royal Victoria Hospital, Netley, Hants.

1925. Williams, Edward Lincoln, M.R.C.S., L.R.C.P.Lond., The Hall, Harrow Weald, Middlesex.

1925. Williams, Rhodri Gwyn, M.R.C.S., L.R.C.P.Lond., Claremont Mental Hospital, Perth, Western Australia.

1922. **Williamson, David Hardie, M.B., Ch.B.Edin., Assistant Medical Officer,** Glasgow District Mental Hospital, Woodilee, Lenzie, N.B.

1923. **Wilson, Alban, M.R.C.S., L.R.C.P.Lond., D.P.M., Medical** Superintendent, Coldeast Colony, Sarisbury, Southampton.

1927. Wilson, Charles Herbert, M.B., B.Ch.Dubl., 52, Fitzwilliam Square, Dublin.

1928. Wilson, Edward Alexander, M.D., Ch.B.Edin., North Murie, Errol, Perthshire.

1925. Wilson, Harriette Appleby, M.B., Ch.B.Leeds, D.P.M., Senior Assistant Medical Officer, West Riding Mental Hospital, Wakefield.

1923. Wilson, Isabel Grace Hood, M.B., Ch.B.Edin., D.P.M., Physician, Tavistock Square Clinic for Functional Nervous Diseases; 42, Harley Street, London, W. 1.

1920. Wilson, James Leitch, M.B., Ch.B.Edin., D.P.M., 10, New Cavendish Street, London, W. 1.

1899. **Wolseley-Lewis, Herbert, M.D.Brux., F.R.C.S., L.R.C.P.Lond.,** "Dormers," Wimborne, Dorset. (*Secretary, Parliamentary Committee*, 1907–12, *Chairman*, 1912–21.)

1921. **Wood, Bertram William Francis, M.B., B.S.Leeds, West African Medical Staff;** c/o P.O., Lagos, South Province, Nigeria.

1869. **Wood, T. Outterson, M.D.Durh., M.R.C.P.Lond., F.R.C.P., F.R.C.S.** Edin., "Lodore," Chelston Road, Torquay. (PRESIDENT, 9105–6.)

1929. Woodcock, Oswald Hampson, M.D.Manch., M.B., Ch.B., P.M.O., Ministry of Pensions (Headquarters Neurological Inspectorate); 22, Ridge Hill, Golders Green, N.W. 11.

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1912. Woods, James Cowan, B.A.R.U.I., M.D., B.S., M.R.C.S., L.R.C.P.Lond., 45, Weymouth Street, W. 1. (Lect. on Ment. Dis., St. George's and London Hosps.)

1885. Woods, John Francis, M.D.Durh., L.S.A., M.R.C.S.Eng., 7, Harley Street, Cavendish Square, London, W. 1.

1912. Wootton, John Charles, *M.C.*, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Haydock Lodge, Newton-le-Willows, Lancs.

1922. Wootton, Leonard Henry, *M.C.*, B.Sc., M.B., B.S., M.R.C.S., L.R.C.P. Lond., D.P.M., Medical Superintendent, Ewell Colony, Surrey.

1900. Worth, Reginald, *O.B.E.*, M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Springfield Mental Hospital, nr. Tooting, London, S.W. 17. (*General Secretary since* 1919.) (Lect. on Ment. Dis., Westm. Hosp.)

1917. Wright, Maurice Beresford, *O.B.E.*, M.D., C.M.Edin., 86, Brook Street, London, W. 1.

1929. Wyllie, Andrew McRae, B.Sc., M.B., Ch.B., Clinical Pathologist, Crichton Royal Institution, Dumfries.

1928. Yates, Arthur Gurney, M.A., M.D.Edin., M.R.C.P.Lond., Physician, Sheffield Royal Infirmary; 53, Wilkinson Street, Sheffield.

1921. Yellowlees, David, M.B., Ch.B.Glasg., 5, St. James Terrace, Glasgow, W.

1914. Yellowlees, Henry, *O.B.E.*, M.D., Ch.B., F.R.C.P.Edin., F.R.F.P.S. Glasg., D.P.M., 93A, Harley Street, London, W. 1. (Lect. on Psych. Med., St. Thomas's Hospital.)

1926. Young, Hubert Turner Penn, M.B., Ch.B.Edin., Medical Officer, H.M. Prison, Parkhurst, Isle of Wight.

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Honorary Members	35
Corresponding Members	31
Total	819

OBITUARY.

Honorary Member.

1918. Bevan-Lewis, William, M.Sc.Leeds, M.R.C.S., L.R.C.P.Lond., 10, Priory Street, Cardigan. (President, 1909–10.) (*Ord. Mem.*, 1879.)

Members.

1874. Beach, Fletcher, M.B., F.R.C.P.Lond., 5, De Crespigny Park, Denmark Hill, London, S.E. 5. (*Secretary, Parliamentary Committee*, 1896–1906.) (*General Secretary*, 1889–1896.) (President, 1900–01.)

1877. Bower, David, M.D., C.M.Aberd., L.R.F.P.S.Glasg., Springfield House, near Bedford. (*Chairman, Parliamentary Committee*, 1907–1910.)

1919. Branthwaite, Robert Welsh, *C.B.*, M.D.Brux., M.R.C.S., L.R.C.P.Lond., D.P.H., Stoke Park, Stapleton, Bristol.

1917. Costello, Christopher, M.B., B.Ch.N.U.I., Assistant Medical Officer, Portrane Mental Hospital, Donabate, Dublin.

1886. Harvey, Bagenal Crosbie, L.A.H.Dubl., L.R.C.P.&S.Edin., Resident Medical Superintendent, District Mental Hospital, Clonmel.

1912. Hughes, Frank Percival, M.B., B.S., M.R.C.S., L.R.C.P.Lond., The Grove, Pinner, Middlesex.

1908. Inglis, James Pringle Park, M.D., Ch.B.Edin., Senior Assistant Medical Officer, Leavesden Mental Hospital, Abbotts Langley, Herts.

1903. O'Doherty, Patrick, B.A., M.B., B.Ch.R.U.I., Resident Medical Superintendent, District Mental Hospital, Sligo.

1901. Tighe, John Valerian George Brosnan, M.B., B.Ch.R.U.I., Medical Superintendent, Gateshead Mental Hospital, Stannington, Northumberland. (*Secretary, N. and M. Division since* 1927.)

1926. Wallis, Robert Lauder Mackenzie, M.A., M.D.Camb., L.M.S.S.A., 106, Harley Street, London, W. 1.

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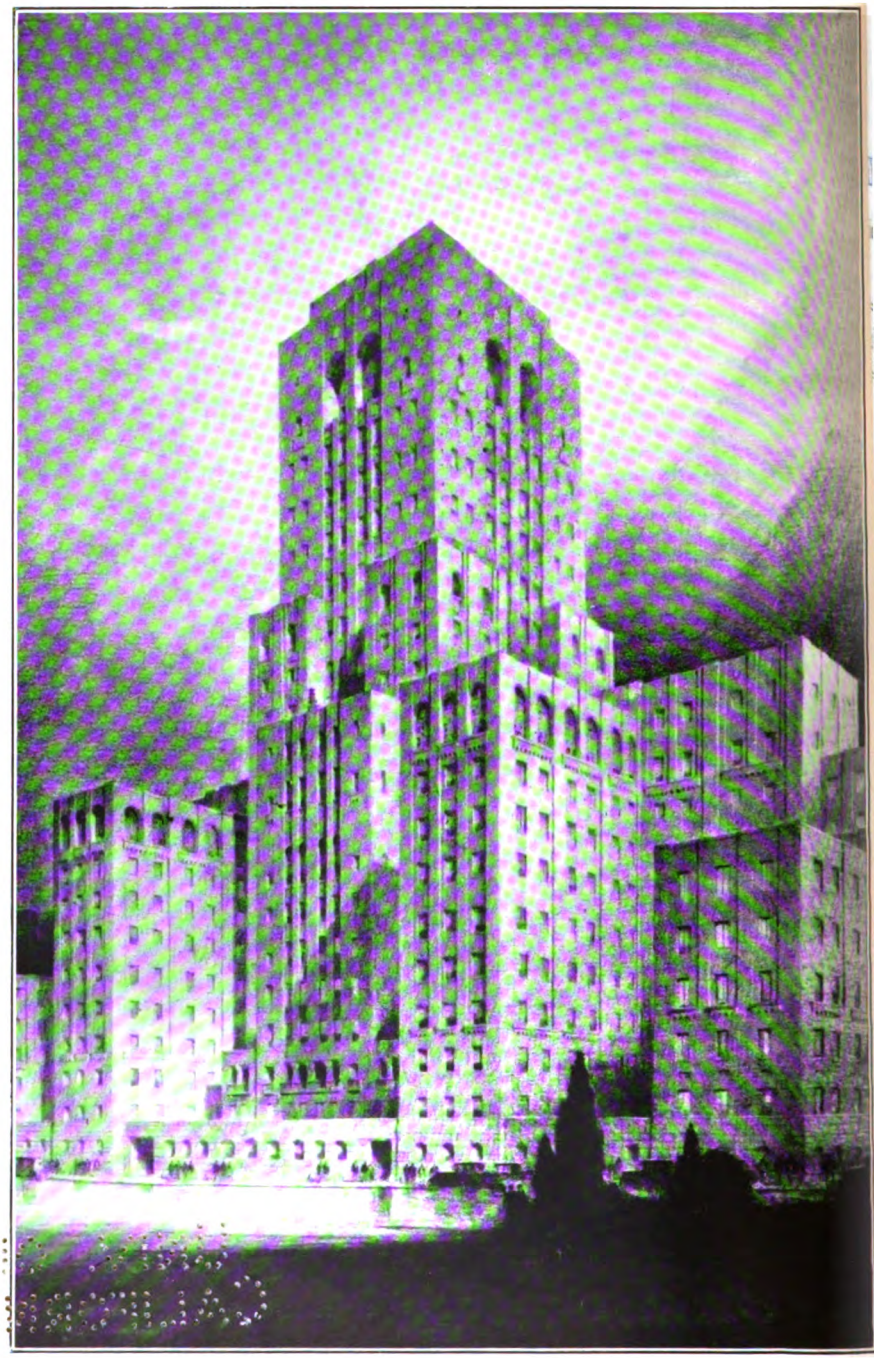

NEW YORK STATE PSYCHIATRIC INSTITUTE AND HOSPITAL AT THE MEDICAL CENTRE NEW YORK CITY.

View from Riverside Drive.

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THE
JOURNAL OF MENTAL SCIENCE

[*Published by Authority of the Royal Medico-Psychological Association.*]

No. 312 [NEW SERIES No. 276.] JANUARY, 1930. VOL. LXXVI.

Part I.—Original Articles.

PSYCHOLOGY OF DEMENTIA.*

By E. D. WIERSMA, M.D.,
Professor of Psychiatry and Director of the University Psychiatric Clinic, Groningen.

Lecture I.

[IT was a great honour for me to receive an invitation from the Senate of the University of London to speak on a psychological subject. I had, however, some diffidence about accepting it, since I have to speak in a foreign language. I feel greatly relieved by the assurance that there is to be no discussion after the lecture. Furthermore, I have brought some lantern-slides with me, to render my lecture more intelligible.]

NATURE OF DEMENTIA.

What is really to be understood by dementia is not an easy question to answer, and yet a decision on this point is often demanded of the medical man. We speak of dementia when anyone, in consequence of intellectual abnormalities, is unable to maintain himself. It is impossible to describe all the forms of dementia.

We distinguish the congenital forms, the oligophrenias, which differ widely from each other, both somatically and psychically, and the acquired dementias, some of which, for instance, are especially characterized by defective memory, while in others all the psychical functions are simultaneously affected. The explanation of this great diversity has been sought in differences of anatomical localization.

* Being a course of two lectures delivered on May 29 and 30, 1929, at University College, London. Published by special permission of the lecturer.

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We distinguish the congenital forms, the oligophrenias, which differ widely from each other, both somatically and psychically, and the acquired dementias, some of which, for instance, are especially characterized by defective memory, while in others all the psychical functions are simultaneously affected. The explanation of this great diversity has been sought in differences of anatomical localization.

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It is true that lately, in some forms of dementia, certain anatomical abnormalities have been found. Yet these cannot give us an insight into the widely divergent psychical abnormalities, so that, at any rate for the moment, anatomy and physiology fail us. It not seldom happens that hardly any psychical defect is found after a great loss of cerebral substance, while in other cases of severe dementia little or no anatomical changes are found.

The question now arises whether psychology can give us a better insight into the nature of dementia. The question is a legitimate one, since there is a physical correlation in the brain, whether normal or morbid, for every psychical phenomenon. This constant concomitance makes it our duty, as scientists, to study the psychology of every psychosis, even when the physical investigation appears to have given us all the information we require. In this way we get a wider view, for what cannot be found in the one way is sometimes shown immediately by the other investigation.

Is there, we ask, in the psychological examination of dementia one symptom which is never absent, which is present from the beginning, and which can always be shown, however the many other phenomena may vary? The answer must be in the affirmative, for in all forms of congenital and acquired dementia, however these may vary in outward form, a lessened degree of consciousness can always be shown. By "lessened degree of consciousness" we understand a state in which external impressions, or even the subject's own thoughts, either cannot cross the threshold of consciousness, or do so only with difficulty, associations being formed, if at all, only imperfectly, so that the formation of syntheses is hampered; in other words, a state in which the accuracy, the distinctness and the rapidity of conception of the contents of consciousness are decreased.

It is evident that this decrease exists in severe forms of dementia; the powers of observation, the taking in and assimilation of impressions are slow, difficult, and frequently inexact. Questions are not answered, or only after several repetitions; defects of memory, disorientation and often confusion exist. In the slighter cases the patients complain of difficulty in understanding and following a conversation, that they forget appointments, and that they are becoming useless. It depends on the form of the dementia whether the patient realizes his abnormalities.

If it is true that this dulling of consciousness underlies the symptoms of dementia, then thinking will be at a lower level; and in low-level mental functions generally, symptoms of dementia, even if only in a rudimentary form, will occur.

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As Heymans has said, for the intellectual processes, for productive thinking, for the formation of correct views and opinions, there are required, not only knowledge and level-headedness, but also interest, which makes concentration possible, a normal amount of phantasy, which stimulates divergent data, and lastly psychical after-effect, by means of which all experiences, even the unconscious ones, may cooperate in the formation of a judgment. There is not always a harmonious development of these fundamental qualities which are essential to thought; and on this basis Heymans distinguishes his intelligence-types, which vary with the varied development of the psychical after-effect, the phantasy or the interest. In pathology we do not find these types so distinct, as in most cases of dementia all three functions are deranged, although not always to the same extent. This is not surprising, since the three mental qualities mentioned have a great influence on one another. Considerable derangements in the psychical after-effect, for instance, will modify the nature of the phantasy and the duration of the concentration of interest. A poor imagination and interest will impress themselves on the form of the dementia.

Interest is undoubtedly one of the most important functions for the building-up of the intellect. By its means the attention is concentrated on the environment, and by the impressions from without the intellect must be built up. Without this interest development would be impossible. The child, which at first is only interested in the absorption of food, very soon receives sense-impressions which demand its entire attention. It begins to follow visual impressions, distinguishes sounds, and notices its own movements, which are at first performed involuntarily, but later voluntarily. In this way the intellect is slowly built up.

The rapidity and the degree of general development differ with the individual, so that within the normal latitude considerable differences exists at the same age. When this development remains below the average, we speak of mental defectives. These are the oligophrenes, who show widely differing degrees of deficiency. They are deficient in aptitude, in power of concentration, they have an innate deficiency of interest, in consequence of which the entire psychical level remains on a lower plane. It may also happen that this deficiency of aptitude is acquired during the subject's lifetime. This is the case with the dementing psychoses.

It is of importance here to call attention to states which externally show sometimes great resemblance to acquired dementia. These include the cases in which interest is temporarily inhibited by preoccupation, which is generally of a highly emotional character. There is then, as we saw, side by side with a partially increased

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degree of consciousness, a great general decrease. This is normal temporarily in cases of grief and worry, pathologically of longer duration in cases of melancholia, hysteria, etc. It is not always easy to exclude these emotional preoccupations. For this purpose the patients must be examined in a calm, quiet, sober condition, so that the influence of hallucinations, delusions, emotions, etc., is excluded. The only results of any value in such cases are those of an examination "*à froid.*"

Still other states can be confounded with dementia, *viz.*, the dulling of consciousness of long duration, such as occurs in cases of mental exhaustion, acute confusion, poisoning, etc. These closely resemble the lower degrees of consciousness of normal life—drowsiness, fatigue, dullness, sleep, certain kinds of intoxication, etc. In both cases, but in the pathological condition to a much greater extent, the process of thought is disturbed, there is a loss of ordered psychical after-effect, activity is lessened, and there is, above all, a great lack of interest. The hallucinations and confusion in dreams point to a similarity with the morbid states of confusion. There is, however, a resemblance not only to the normal reduction, but also to some forms of dementia, which is sometimes so great that it is impossible to point to any essential difference other than that the former are transitory, the latter permanent, generally progressive, sometimes stationary.

It is, however, not unimportant to point out that in paralytic, in senile and in arterio-sclerotic dementias remissions are met with which sometimes border on a *restitutio ad integrum.* It is obvious that here, too, as everywhere in pathology, gradual transitions are found between disease and health, and that the psychical phenomena of normal individuals differ only quantitatively from the mental abnormalities of psychotics, and in this case of the dements.

And now the second question must be answered, *viz.*, whether, in the case of other forms of mental reduction, symptoms are to be found such as occur in cases of dementia. It has already been shown that states of mental exhaustion, acute mental disorder, etc., may show such a great resemblance to chronic dementia that they can hardly be distinguished from it. Some of these cases have been called acute dementia. But apart from these pathological reductions there are also in normal life, besides fatigue, somnolence, periodical fluctuations of sleep, etc., lasting differences of mental level. Some persons observe everything accurately, nothing escapes them, they display great interest, while others allow a great many impressions to pass by them unobserved and show much less interest in their environment. The former live in a higher degree of consciousness, and a great many of the latter in a lower. If now we

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were able to determine accurately the psychological characteristics of these two groups separately, the latter group should show symptoms which are also found, although to a much greater extent, in demented patients.

A division between these two groups can easily be made by means of the data of an inquiry which was instituted by my colleague Heymans and myself in 1905, with the purpose of studying psychical heredity. Questionnaires were sent to every doctor in the Netherlands, with the request that they would answer the questions contained therein with respect to a father, a mother, and one or more children. The 90 questions were with regard to the temperament, the intellect and the character. This inquiry put us in possession of about 2,600 psychograms.

In 1908 a second inquiry was made, as it appeared to us desirable to become better acquainted with the mental development of the children, in addition to the hereditary factors. The information was obtained through the voluntary assistance of a number of teachers of high schools and grammar schools. Lists were sent round, which, like those of the first inquiry, contained questions about qualities of temperament, intellect and character. The first inquiry we call the heredity inquiry, the second the school inquiry.

In Question 40 of the heredity inquiry and in Question 44 of the school inquiry we asked whether the subject was a good observer, whether he observed all kinds of trifles in the environment which were overlooked by others, or whether he was a poor observer, so that many things right before his nose escaped his notice. By means of these questions, therefore, two groups were selected from the material of the inquiry, *viz.*, good observers, with whom the external impressions had a higher degree of consciousness, and poor observers, with whom these impressions have a low degree of consciousness. This latter state might arise in the case of adults from two causes—in the first place from preoccupation, during which consciousness is engrossed in some other way, and secondly, in consequence of a lowered level. The inquiry enables us to separate the preoccupied, these being characterized by a stronger psychical after-effect. Further investigations convinced me that this division is neither desirable nor necessary—not desirable, since it splits up the material too much, and not necessary, since poor observers, even when the preoccupied are not separated, possess a much weaker psychical after-effect than the average. The characteristics of the subjects with a lower degree of consciousness are not levelled down, even when a few preoccupied subjects are present among them.

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For the school inquiry it is not necessary to ask, in the case of poor observers, about the extent of the secondary function, since children are predominantly primary functioners, so that it is certain that preoccupation can in this case very seldom be the cause of low power of observation.

What are the psychical correlations of the low power of observation according to both inquiries? Let us determine the psychogram of poor observers, first according to the heredity inquiry and then according to the school inquiry. Low power of observation can, as we have seen, be identified with the low level of consciousness, high power with the high level. The psychical phenomena of the two states of consciousness diverge in opposite senses from the average, as is clearly shown by all the tables given below. The qualities of temperament, the intellect, the talents and the tendencies, or the character in the narrower sense of the term, were more particularly inquired into, since thereby the personality is formed. A person's personality finds expression in his actions. He is as he shows himself, as he feels, thinks and acts, as he reacts to the external world. This thinking, feeling and acting varies individually so much by reason of the great diversity of the qualities of temperament, gifts, talents and aptitudes.

The *temperamental qualities* indicate in what way the psychical phenomena react and work. They have relation to the rapidity of the progress, the permanence and the emotional manifestations of the mental processes. These include the activity, the emotionality, and the degree of psychical after-effect.

Activity and emotionality are abstractions which require little explanation. Activity is the greater or lesser impulse and desire for work, emotionality the degree of susceptibility to emotions, the degree to which one is attracted by things. For the psychical after-effect a short explanation is necessary. We distinguish for each content of consciousness a primary and a secondary function. The primary function is the working during the time that it remains in consciousness: the excitation of images, the formation of associations, the supersession of other contents of consciousness, the emotion which arises simultaneously, etc. The secondary function is the after-effect, that is, the effect on the consciousness when it is no longer above the threshold. Without this after-effect it would be impossible to follow a demonstration, to understand the contents of a book, or to solve a problem. For in consequence of the conception of the problem on the background of the consciousness images arise, which may be of service in solving it, even if the conception of the problem is not actually the subject of thought. The phenomena of hypnosis, of hysteria, of

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psycho-analysis, etc., point to the existence of psychical contents which are non-conscious, but none the less produce after-effect.

The following tables show the percentages numbers for the poor and for the good observers in comparison with the average persons.

Heredity Inquiry.

The *activity* of poor observers is far below the average; they are active by fits and starts, they take it easy, they are lazy and inclined to delay, neglect obligatory work, are more easily discomfited, are more impulsive and more undecided.

Non-Activity.

	Observers.		
	Poor.	Average.	Good.
By fits and starts	24	16	14
Easy	45	29	23
Lazy	13	5	4
Delay	18	12	12
Neglect work	18	12	12
Easily discomfited	44	25	22
More impulsive	50	38	37
,, undecided	45	28	23
	257	165	147
Average	32	21	18

The *emotionality* is stronger, they are more violent, more irritable, more gloomy and more unstable. They are furthermore more fearful in danger, more afraid in cases of sickness, impatient, and quickly call in medical assistance.

Emotionality.

	Observers.		
	Poor.	Average.	Good.
Emotional	62	53	53
Violent	53	42	44
Irritable	54	43	44
Gloomy	7	6	5
Unstable	43	33	34
Fearful	48	32	29
Afraid in sickness	37	25	24
Impatient	34	21	22
Quickly call in medical assistance	39	32	33
	377	287	288
Average	42	32	32

The *psychical after-effect* is weaker, the primary function stronger. They are sooner consoled after a loss, more quickly reconciled, variable in their sympathies, susceptible to new impressions and new views, easy to talk round, fond of change. They have many

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great plans, which are not realized or not carried out, their activities are directed rather to obtaining immediate results than to the future, and their thinking and acting are contradictory.

Primary Function.

	Observers.		
	Poor.	Average.	Good.
Sooner consoled	50	37	39
Quickly reconciled	45	42	43
Variable in sympathy	27	19	17
Susceptible to new impressions	31	25	28
,, to new views	32	49	60
To be talked round	24	13	10
Fond of change	35	34	38
Great plans	20	13	17
Immediate results	42	29	30
Contradictory	26	13	13
	332	274	295
Average	33	27	30

The *intellect* of poor observers is far below that of good observers and that of the average. They are less teachable and sensible; they lack the aptitude for development in different directions. They have a poor knowledge of human nature, are narrow-minded, unpractical and clumsy. The mathematical, musical and other talents are defective; they are not witty, but prolix, and their memory is bad.

The *intellectual* qualities of the poor observers are diminished.

Intellect.

	Observers.		
	Poor.	Average.	Good.
Less teachable	44	20	12
,, sensible	68	26	16
Small knowledge of human nature	70	26	16
Unpractical	52	16	8
Narrow-minded	50	21	14
Not witty	58	32	25
Prolix	42	19	14
Unhandy	41	15	10
Bad memory	18	7	5
	443	182	120
Average	49	20	13

There are also very distinct differences with regard to the *tendencies*—much more than the vital tendencies, which do not vary to any notable extent from the average; some egotistical ones occur in poor observers in the foreground and some altruistic ones in the background. They are vain, self-satisfied, greedy,

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extravagant, domineering, not kind to their subordinates, egotistical, not philanthropic or fond of children or animals. They are also forced and affected in their deportment, uncommunicative, inclined to embellish and exaggerate, and more mendacious.

Tendencies.

	Observers.		
	Poor.	Average.	Good.
Self-satisfied	45	33	34
Vain	20	18	22
Greedy	7	3	3
Extravagant	9	6	6
Domineering	26	22	25
Unkind to subordinates	13	7	6
Egotistical	22	14	15
Little philanthropic	21	12	11
Not fond of children	25	12	11
,, ,, animals	28	22	23
Forced	28	19	17
Affected	12	8	7
Uncommunicative	38	32	35
Embellishing	14	12	13
Exaggerating	27	21	21
Mendacious	6	3	2
	341	244	251
Average	21	15	16

A review of the results of the heredity inquiry shows us that poor observers, with their lower level of consciousness, are far inferior in several respects to good observers in their mental development.

School Inquiry.

Just as shown by the heredity inquiry, the *activity* of poor observers is not up to the mark. They are lazier, more easily distracted, playful, and occupy themselves more with other things. They dawdle away more time before beginning their work, and finish much later.

Non-Activity.

	Observers.		
	Poor.	Average.	Good.
Lazy	29	13	9
Playful	23	16	19
Distracted	34	21	19
Dawdle	35	9	6
Finish later	58	25	19
	179	84	72
Average	36	17	14

The *emotionality* is much greater than the average, and than that of good observers. They are sooner angry, more susceptible

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to a reprimand, more nervous, timid in danger, more depressed and gloomy, and also more changeable, and they are more easily discouraged.

Emotionality.

	Observers.		
	Poor.	Average.	Good.
Sooner angry	23	14	15
Susceptible to reprimand	44	19	17
Nervous	45	25	30
Timid in danger	27	7	3
More depressed	17	7	3
Gloomy	36	15	19
Changeable	26	16	26
Easily discouraged	31	13	11
	249	116	124
Average	31	15	16

The *psychical after-effect* is below the average. They are less persevering and more impulsive.

Primary Function.

	Observers.		
	Poor.	Average.	Good.
Non-persevering	74	23	6
Impulsive	21	15	30
	95	38	36
Average	48	19	18

As is the case with the heredity inquiry, all questions about the *intellect* show the poor observers to be deficient. In intelligence and accuracy, aptitude for mathematics, natural history, language and drawing, they are inferior to good observers and to the average. They are much poorer and slower judges of their work, and are therefore not so clever at solving problems and doing exercises.

Intellect.

	Observers.		
	Poor.	Average.	Good.
Intellectual	13	35	82
Accurate	10	30	68
Apt in mathematics	6	8	11
,, natural history	3	5	13
,, language	2	10	17
,, drawing	2	3	4
Clever at solving problems	1	8	19
,, at doing exercises	5	10	20
	42	109	234
Average	5	14	29

The inquiry by means of questionnaires showed that a poor observer, in consequence of a generally low level of consciousness,

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is inferior in mental development to the good observer and the average person. More especially in respect of intellect, but also in respect of morality, they have remained on a lower level for the intensive voluntary concentration of the attention and the wide interest in the outside world are present to a smaller degree. This difference in the level of consciousness of the material of the inquiry is still within the bounds of the normal healthy latitude, but it may assume greater proportions so that the threshold of sanity is crossed, and gradually the slighter and the more severe pathological states arise.

The oligophrenes are individuals with a very low power of concentration of the attention. Interest is in the worst cases so far decreased that we can hardly speak of mental development at all. They are then able to do no more than satisfy their physical needs, such as eating and drinking, or make known a few wishes by means of defective gestures, emotional expressions, or by means of a few sounds or hardly intelligible words. At a higher level they are clean, they learn to walk, they speak more distinctly and possess a larger vocabulary. There is thus a very gradual transition to the normal human being. Idiots in the narrower sense of the term have no command of language, or only a very poor one. They remain unclean, and are only to a very small extent capable of development. Imbeciles are a trifle better. They speak, they are clean, and are capable of a certain measure of education, so that the best of them are capable of profiting by schoolwork, and even by technical training, if given by teachers trained in that sort of educational work. The feeble-minded attain a still higher development, and the best of them differ but little from the lowest of the normal class. The personal initiative and the general interest necessary for complete development leave in these cases too much to be desired. So we have here a very gradual transition between pathology and sanity. The greater or lesser capability of development of the sane and the oligophrenes may be determined quantitatively by the Binet-Simon method.

This method, which is employed in the original or in a slightly modified form all over the world for testing the intellect, is, as Binet considered, not only serviceable for normal and feeble-minded children, but can also be used for determining the degree of acquired dementia in adults. Before introducing this method of judging dementia in my clinic, I wished to form an opinion as to its value from my own experience. Immediately on the publication of the Binet-Simon method of 1911, an improvement of that of 1908, I tested by it 141 children from an elementary school in Groningen. I will not say much about the technique and calculation of the

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results. Binet and Simon started from the fact that the development of the intellect gradually increases with the age. They thought out a number of tests, the answering of which makes slowly increasing demands from the easiest to the most difficult. This enabled them to divide their tests into groups, the answering of which gradually increased in difficulty. Some questions, for instance, could be answered at the age of 7 years and over, but not at the age of 6. This investigation enabled them to find out whether a child of 5, 6, etc., up to 12 years of age is intellectually at the level of his age, above it, or below it.

The great practical value of this method for school and clinic is obvious. The questions were chosen so that the answering of them depended as little as possible on instruction and education. So the tests could be made without laboratories or instruments. It did not take long to eliminate the influence of fatigue and boredom. In this way a standard could be found for the intellectual development. The modifications introduced in 1911 proved to be of great advantage. The questions relate to the memory—impression and retention, to the psychical after-affect, to judgment, phantasy and adroitness.

By means of these intelligence tests, as I have said, 141 children were tested. Of these children 53·9% answered the questions for their age well; about half are therefore normal children, about a quarter are intellectually inferior, and the remaining quarter intellectually superior. There are therefore about 75% of the children who answer the tests for their age correctly. It is worthy of note that nearly all investigators in all countries came to about the same results under very different circumstances.

Investigation of 141 *Children.*

Age.	Number.	Percentage. −	=	+
6	25	4	76	20
7	21	14	52	33
8	26	12	54	35
9	17	35	47	18
10	30	37	47	17
11 } 12 }	22	45	45	9
		147	321	132
Average		25	54	22

Are the results of this intelligence inquiry in agreement with other performances—for instance, with the school work—of which we know for certain that they are connected with the intellect? This investigation may be tested by means of the school work in two

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ways. In the first place a certain number of children were not regularly promoted to a higher class. They were in a class which was too low for their age. In the second place I had at my disposal the report marks of part of the pupils.

Of the 141 children, 21 were not promoted, and of these, 15, or 71·4%, were intellectually inferior. Only 3, or 14·3%, were intellectually superior, but among these were two bargee's children who had not often attended school, and one with a serious impediment in his speech.

Children not Promoted.

	−	=	+
Absolute	15	3	3
Percentage	72	14	14

I have the report marks of 49 children with reference to their promotion. The marks run from 1 to 5; 3 is on the borderline, higher marks are amply satisfactory, lower decidedly unsatisfactory. Of the 49 children 32 were amply satisfactory, 16 unsatisfactory. Of the satisfactory pupils 18·7%, of the unsatisfactory 31·2%, were intellectually inferior, whilst of the satisfactory ones 55·1% and of the unsatisfactory only 43·7% were at the level of their age.

Satisfactory and Unsatisfactory Children.

	Percentage.		
	−	=	+
Satisfactory	19	58	28
Unsatisfactory	31	44	25

With regard to the difference in sex the following can be stated: There were 68 boys and 73 girls. Of the girls 58·9% and of the boys 48·5% were normal children. From this we see that the girls showed better results than the boys. It should be added that the greatest intellectual superiority and also the greatest intellectual inferiority were found among the boys. This would agree with the opinion already expressed, that the highest and lowest intellectual performances are more often found in men than in women.

Difference in Sex.

	Boys.			Girls.		
	−	=	+	−	=	+
Percentage	27	49	25	22	59	19

The results above obtained prove that we must attach great value to the method of Binet-Simon. Every one who has worked with it is convinced of its utility, but no one will deny that a great deal of improvement is still required. Many have pointed out in

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detail that many other tests are required, which will serve as parallel tests. This demand has been met in the last few years by many investigators. In the domain of attention and phantasy which are of such great importance for intellectual work, I have tried to find a few parallel tests.

The concentration of attention was determined by means of the dotting apparatus. The person to be tested has the task of pricking with the point of a needle in small circles, drawn irregularly on a strip of paper, which passes across the field of vision at a speed which can be varied at will and can be accurately measured for a period of 10 seconds. When the speed with which the circles pass has become so great that three of them are not properly hit, the boundary line of concentration of attention has been crossed. The speed is measured by the number of circles passing the eye in one minute. It was found that the concentration of attention increases each year between the ages of 6 and 12. The intelligence scale of the 59 children, tested in this way, was also determined by the Binet-Simon method. It was found that the normal children always possess a greater power of concentration of the attention than the children of inferior intelligence, and a smaller one than the children of superior intelligence.

Dotting Apparatus.

Age.	Number.	Average of concentration.
6	10	69
7	3	83
8	20	88
9	12	93
10	5	99
11 12	9	110

The phantasy investigation is also suitable, on account of its simplicity, to the determination of the intellect. The subjects were required to make as many words as possible, within two minutes, from the Dutch word "droom." This test, which was carried out on 157 children, approximately equally divided over the years between 6 and 12, showed clearly that the increase in the number of words, which showed the power of the phantasy, is connected with the age. It was found that making three words is a good test for children of 10, and four words for children of 11. Of these children 62 were at the same time tested by the Binet-Simon method. A comparison shows that the number of words made increases with the increase of intelligence. Children of inferior intelligence make fewer, those of superior intelligence more words than the normal children.

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Words from "Droom."

Age.	Number.	Average number of words.
6	15	0
7	20	1
8	25	1·8
9	20	1·8
10	24	3·8
11	29	4·4
12	24	4·41

The very simple test with picture puzzles also gives good results. The parts of a horse or of a dog have to be joined together within a fixed time. This power also increases with the age. Furthermore, there is also in this case a close agreement with the results obtained by the Binet-Simon method. Normal children can put these cards together better than the children of inferior intelligence, but not so well as those of superior intelligence.

There is still another method which is of great value in determining the intelligence of normal persons and patients. This is the test with the so-called hazy photographs. Photographs of a number of objects are taken; these are of gradually increasing distinctness, the objects having been focused with varying sharpness. The most indistinct ones cannot be recognized, but gradually they get plainer. It is not only of importance to determine at what point the object is recognized, but also to find out what object is named from the unrecognizable photographs. We have thus a means at our disposal of determining both the active and the passive imagination. This method is regularly employed in our clinic.

It is necessary to say a word about the technique of the Binet-Simon method. I will not go into the subject of the manner in which each individual question is put. Information on this point is given by Binet and Simon and many others. I will only point out that the test must take place in a quiet room, where the subject's attention will not be distracted. The person carrying out the test must be alone with the child or the patient, or with at the most a third person, who notes down accurately all that is said. No influence should be exerted on the answers. It is not enough to put down a plus or minus sign after the answer given. Everything, including the behaviour of the child or patient, should be accurately noted. All these notes are of importance for the final conclusion.

This test is very suitable for determining the degree of intelligence of normal persons and patients. In the case of normal children it is of importance to determine whether their level of intelligence corresponds to their age. By this means they can be placed in the proper class at school. The possibility of development can be determined for imbeciles and the feeble-minded. The

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deficiency in intelligence can be expressed in terms of the age. This test is of importance in determining in which class and at what kind of school the children should be placed. This method is also of service in the determination of acquired dementia in the clinic, as it gives us a clear measure of the mental decay.

The above shows clearly that all the phenomena of dementia are dependent on lowering of consciousness. There is slight interest, lack of imagination, and decreased psychical after-effect. The stock of knowledge is also small, and the power of judgment is limited, because voluntary concentration and voluntary transference of the attention are reduced. These effects are connected with aptitude and interest, which must be regarded as innate functions, by means of which the development may take place in particular directions, and by means of which, therefore, intellectual possession may also be acquired. The quantity of knowledge acquired in a particular field may, therefore, be regarded as a measure of the aptitude for development in that direction.

In judging as to dementia it is therefore of importance to investigate the knowledge and, at the same time, the judgment of the patient. The school knowledge of normal persons varies so widely that it can scarcely be taken to be a measure of the intellect. The circumstances under which different people receive their schooling and the use they make of it after their school-days in social intercourse varies so widely, that a deficient school knowledge cannot be considered a proof of a poor intellect. Only when a recent rapid loss of school knowledge can be noted, as is frequently the case with acquired dementias, or when the result of the teaching is far from corresponding to the effort made, as with oligophrenes, can one postulate in the first case mental decay, in the second inferior aptitude. A better estimate of the intellect may be formed by means of an inquiry into the knowledge of experiences in everyday life. In very serious cases the names of the months, the length of the year and of a leap year, the points of the compass, the place where the sun rises and sets, the times for sowing and reaping, etc., have been forgotten. It is easy to modify these questions at will, according to their difficulty, and to adapt them to the social circumstances of the person to be examined.

When, however, this examination shows that the stock is still sufficient for social intercourse, this is not a proof of the integrity of the intellect of the person in question. For with great intellectual development the remaining reserves may be quite sufficient for social needs, although, in comparison with formerly, a distinct deterioration must be assumed. And, conversely, a number of investigations, for instance the intellect investigation of recruits

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by Roderwaldt, show that a normal person requires extraordinarily little knowledge to maintain himself in simple conditions of life.

This shows that whilst the amount of knowledge acquired can give us a good insight into the decreased power of development of oligophrenes and into the mental decay in cases of acquired dementia, we should be cautious in concluding the presence or absence of dementia from the stock of knowledge alone. And this is not surprising, since, as we have seen, the building up of the intellect depends on the aptitude and the concentrated interest. Through these not only the stock of knowledge, but also the rapidity and the completeness of development are determined. I shall shortly have to revert to this development in connection with a few experiments.

In addition to the importance of the investigation of the knowledge possessed and the capacity for development, in which the memory and the judgment play an important part, it is also of importance to test the judgment by special experiments. I will mention a few of these in passing, without going into detail about the results thereby obtained. The method of giving definitions, the explanation of proverbs, the comprehension of witticisms, the explanation of the connection between pictures in a series, the comprehension of absurd drawings, and especially the combination method of Ebbinghaus, etc., are very suitable for this purpose.

Besides the fact that the symptoms of dementia are dependent on the sinking-in of consciousness, the above shows clearly that there is a very gradual transition between the various degrees of this condition. This is proved by the differences which can be found between normal children. The children found normal on the Binet-Simon scale occupy not only intellectually, but also with respect to their concentration of attention and imagination, a place between the children of superior intelligence and those of inferior intelligence. It is further found that the pathological acute lowering of consciousness after exhaustion or sickness or after poisoning forms the link which connects the normal lowerings and the dementias. They are often so difficult to distinguish from dements that acute dementia has in some cases been spoken of. Moreover the examination of the poor observers has shown that these deviate in the same sense from the normal individual as the dementias, so that we must assume that within the limits of sanity human types occur which display in rudimentary form the symptoms of dementia.

And now something about experimental investigation. By means of this the slow transition between the lower and the higher degrees of consciousness can be demonstrated. The former are characterized by a diminished voluntary attention, the latter by a heightened one. There are very many good methods of measuring

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voluntary attention. I have made use of two of these, namely, æsthesiometry, which was first used by Griesbach for the determination of exhaustion, and Bourdon's method.

For æsthesiometry the method employed was that indicated by Binet. The subjects of the experiment are touched on the back of the hand with the blunt ends of two needles of a certain thickness. The needles are affixed to pieces of cardboard at various distances from each other. The distance between the needles is 0 (only one needle), 1·5, 2, 2·5 and 3 cm. The needles must be placed on the skin simultaneously and always with the same pressure. The hand rests quietly on a table, a screen hiding it from the subject's sight.

The test is carried out by placing the needles in irregular sequence of distances, but at regular intervals and each distance the same number of times, namely five, on a given part of the skin. The subject has then to state whether he has felt one or two points. These investigations were repeated on five successive days at the same time of the day. To judge the attention I made use of the criterion that contact with one needle should always be felt as one point, contact with two needles at distances of 2·5 and 3 cm. should always be felt as two points. In a long-continued experiment with a great number of normal persons this invariably proved to be the case. When mistakes are made they are, as a general rule, to be regarded as evidence of a disturbance in the power of attention. When the patients are so demented that they do not understand the question, this method is, of course, useless. The investigation very quickly shows whether this is so. The concentration of attention is seen by this method to be much worse in the case of the dements than with normal persons. Normal persons give 96·9% correct replies, the dements only 76·9%. Among normal persons there is also a great difference in the concentration of attention, but never as great as between the normal and the dements.

The second test is made by the Bourdon method. By means of this the rapidity and accuracy are measured with which the subject can mark certain figures in a test. The normal ones mark on the average 86 figures a minute, the dements only 54·8. The normal persons make practically no mistakes, whereas the dements mark very inaccurately.

These two methods give us an impression of the degree of consciousness. The lower level determined in this way in the case of school-children is accompanied by slower progress.

The amount of knowledge may, as we have seen, be a measure of the capacity for development. For this reason an investigation must be carried out for the purpose of judging the degree of dementia.

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But the interest and the disposition have still another function. They also fix the rapidity and the completeness of the development. An increased interest will thus be accompanied by a deficient capacity for training. We may therefore expect that this capacity will be much weaker with a low degree of consciousness than with a higher one. This is clearly shown in the tests on the Bourdon method. Children at a lower level are much less easily trained in marking the figures than average children.

Great differences in training capacity are also evident in the psychological investigations among students. Efficiency tests were carried out with students in many ways. I will only mention one

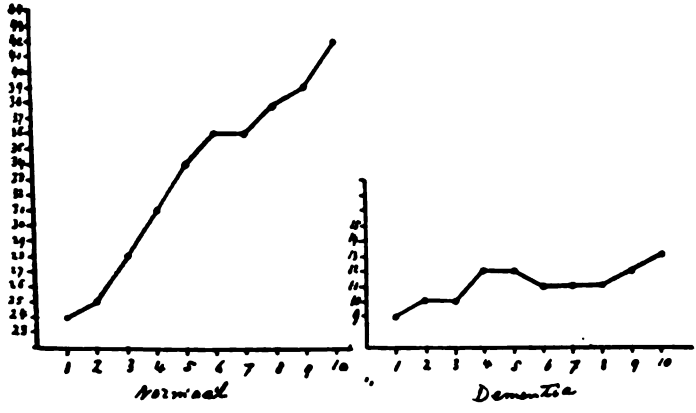

FIG. 1.—Abscissæ = days; ordinates = number of objects seen.

of them, the so-called light-box test. This apparatus consists of a small box in which a light can burn. There is an opening in one side, in front of which a plate with figures can be placed. The subject sits before the box in a dark room. If the light in the box is lit, the figures on the plate become clearly visible. Each plate contains ten figures, and ten plates are shown to each subject. These experiments are repeated on five successive days. After each experiment the subject has to state what figures he has seen. The "training capacity" is expressed in the appended table in terms of the difference in the number of objects seen on the first and last days.

A	.	12	D	.	15	G	.	14
B	.	8	E	.	7	H	.	7
C	.	5	F	.	2	I	.	13

This small number shows sufficiently well that there are great differences in training capacity amongst normal persons. An

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arbitrary number were taken from a large stock of experiments. The correlation with the degree of consciousness was not determined in these cases.

Much greater still than the difference between normal persons is that between normal and demented persons. Tests with the light-box described above were made for ten days with six normal and eight demented persons (paralytics, senile dements and arterio-sclerotics). The difference in training capacity is shown by the following curves, in which the average results of each day are expressed.

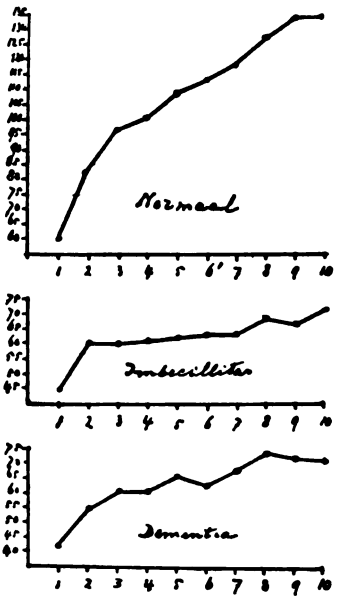

FIG. 2.

The following test was made with ten normal persons, ten imbeciles and ten dements. Their instructions were to seek and mark as quickly as possible particular figures in a list. The curve shows that the normal persons do much more and that they improve regularly with training. The dements and the feeble-minded improve much less.

The improvement in the power of memorizing was determined in the following manner: Three rows of five numbers of two digits were dictated successively to the subject. He had, after each experiment, to reproduce as many numbers as possible. Those numbers were counted as correct which in the reproduction were given in the right order. The experiments, which lasted for four

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days, were made with ten normal persons, ten imbeciles and ten dements. The number of correct reproductions is expressed in the following curve:

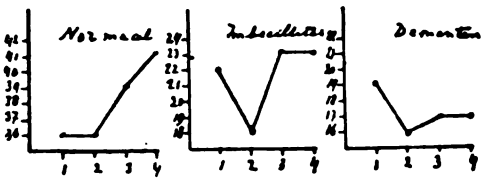

FIG. 3.

Normal persons are seen to improve distinctly with training, whereas with imbeciles and dements this is not the case.

An improvement also takes place in simple movements. This is shown by the following curve. The instructions were to write

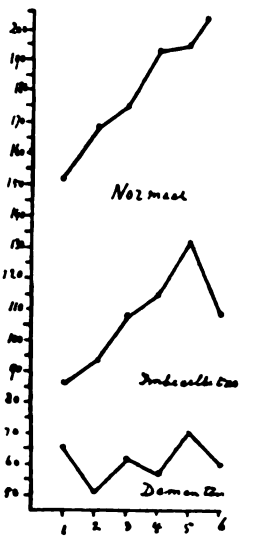

FIG. 4.

down as quickly as possible two vertical and one horizontal line (| | —). The experiments were repeated on six successive days.

This curve points to a great improvement with training on the part of the normal persons and an absence of improvement on the part of the dements. The imbeciles carry out the movements less rapidly, but, if we disregard the last day, they, too, show a considerable improvement.

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This test shows that a decrease in training capacity goes with a low degree of consciousness. In the case of imbeciles the remarkable phenomenon is seen that there is no improvement with training when demands are made on the intellect, but if no more than a mechanical writing down of marks is required there is an improvement. This would appear to agree with the view that in the case of imbeciles the intellectual training capacity is diminished, but that automatic training capacity remains.

I hope I have made clear that dementia can also be considered from the psychological point of view, and that there is not an essential, but only a gradual difference between the normal and the pathological lowerings of consciousness.

I believe that these results are in agreement with those obtained by Prof. Spearman and Dr. Hart in their very important investigations on "The Mental Tests of Dementia." For the "diminution of the cortex functions," to which they refer in their conclusions, is the same as the "lowering" of consciousness which I have found.

Lecture II.

FORMS OF DEMENTIA.

In order to determine whether there is a general lowering of consciousness, the patient, as I have already stated, must be judged *à froid*. The reduced mental performance in consequence of emotions, hallucinations, delusions, etc., is secondary, and not dementia. Nor can the transitory lowering of consciousness in consequence of poisoning be counted as such. The permanent lowering of consciousness which remains after the departure of these disturbances, and in which a decrease of aptitude in various directions exists, may be counted as dementia. Amongst such cases we have in the first place the oligophrenes, who only differ in degree from the normal persons, the dull, the half-witted, and the "*bornés*." In the second place there are the acquired dementias, which may show themselves in widely varying forms. The nature of the dementia is at first determined by the disease process. Later there is such a mental decay that the forms can hardly be distinguished from one another. The difference in the forms of the dementia is easy to understand, when we consider that the mental make-up varies very greatly in different individuals. Some, for instance, have an aptitude for scientific work, others for art. This innate difference in disposition of the psychical functions is accompanied

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by a difference in resistance. A stronger disposition will offer a longer resistance to the destructive effect of pathological processes than a weaker one, and so it is easy to understand that not all the psychical functions disappear at the same rate. The same social influences or influences of age or disease will be easily tolerated where there is a greater power of resistance, and will give rise to disease where the disposition is weaker. Living in an intellectually inferior *milieu* may have a degenerating effect; old age and lues may be accompanied by dementia if the resistance is weak. With a sufficient power of resistance these detrimental influences are of no effect. This difference in resistance also explains the fact that the same pathological process does not run exactly the same course in different cases, so that both senile dementia and paralysis may occur in different forms. But in spite of this we can always see a greater agreement among the senile as a class and the paralytic as a class than between the senile and the paralytic.

The explanation must be sought in the fact that the resistance of the psychical qualities to particular harmful influences is not the same in all people. Some, for instance, show a weaker resistance to luetic infection, so that it is easy to understand that various forms of dementia occur. I would call attention to a few of these forms here.

Senile Dementia.

Senile dementia has from time immemorial been counted amongst the organic psychoses. A number of anatomical changes are found, which under the microscope are at once seen to be atrophy of the gyri, which are narrow, whilst the sulci are deep. The cortex is narrow and atrophied. To this correspond microscopic changes, which also point to destruction of the ganglion cells. But the clinical phenomena cannot be entirely explained in this way, so that it is desirable to examine the dementia from a psychological point of view also.

The mental aberrations of the senile dements are closely connected with normal old age. We see the pathological conditions slowly developing from the symptoms of the still healthy aged person. This transition is here easier to determine than in any other disease, since the process goes on so extremely slowly. To a very old age the intellect may be unimpaired. Apparently nothing has been lost. The memory is excellent and accurate, everything is thought of; the judgment of everyday affairs, difficult scientific, political and religious questions is as good as ever. Especially in the case of people who in earlier life were gifted with a lively and many-sided interest in things do the mental functions

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remain unimpaired to a very old age. It is difficult, however, especially with persons of all-round education, to show the beginning of mental debilitation. They have collected in the course of their life such great reserves, with which they can maintain themselves in social life for a long time, even with a slight degree of insufficiency, that no one notices anything abnormal. And yet there is often a subjective feeling of deterioration, and comparison with former conditions also points to a slight deterioration. This is often most evident when one compares the time and effort now required for their work with that of a former period of their life. The activity is reduced. They have a feeling of physical deterioration, of being more quickly tired, and of less strength for severe efforts.

Psychically, too, there is less ambition. They have so often experienced the fact that there are many failures in life, and besides this the charm of novelty has disappeared as a result of many experiences. This latter points to a diminution of emotionality, in consequence of which the great interest of earlier days grows fainter. They have greater difficulty in adapting themselves to circumstances, have less sympathy with new ideas and views, and are bound by old habits of thought. The slighter degree of interest is accompanied by a diminished impressionability, which may be aggravated by a readier mental fatigue. Changes in character also not infrequently occur. The tendency to isolate oneself gains ground, and in consequence of this decrease in altruism the childish egotism grows stronger. These symptoms, which are still within the bounds of health, may become more marked, and then senile dementia begins. Where health ceases and disease begins it is impossible to say, and this point is not on the same psychical level in all cases.

Just as in old age the lowering of consciousness first shows itself in disturbances of memory, so the beginning of dementia is also to be found first in diminished impressionability and retentiveness. The course of these deviations, which follow Ribot's law, has already been dealt with. Childhood memories may still remain unimpaired for a long time, whilst long periods of later life have already completely disappeared. An old woman of 86 with very marked derangement of memory had lost all recollections of the last fifty years, whilst she could accurately relate events of her younger days. She did not recognize her own portrait at various times of her later life, but she at once recognized a portrait taken in her youth (twenty years of age).

This systematic demolition of the mental powers, which shows itself very soon in disturbances of memory, gives a curious

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impress to this form of dementia. In the end all the other psychical functions diminish in strength. The judgment deteriorates and finally disappears. The patients then live entirely in the distant past, and are back again in the years of their childhood. They play with dolls, behave like children, fancy themselves with their mother, and so on. The qualities of character also share this retrogression in the same way. The altruistic tendencies, which are formed latest, are the first to weaken; the egotistical ones come into the foreground to a much greater extent than in normal old age. The physical needs are felt very strongly (eating, drinking, etc.). Lack of inhibition is also the explanation of the increased sexual tendencies, which occur especially in the case of senile dementia in men. Interest in the surroundings is diminished and thereby concentrated on the patient himself. There is thus a relapse, both intellectually and affectively, to the age of childhood. With this is also connected great irritability, often impulsive behaviour, obstinacy in some cases, greatly increased suggestibility in others, and not infrequently these qualities are represented in the same person.

The regression of the expressions of will also follows the course above described. The activity decreases more and more. The patients do not translate their thoughts into acts. They are extremely undecided. The tendency to this is already plain in normal old age. But these patients remain correct in their behaviour for a period much longer than other dements. In demeanour and conversation they are irreproachable. At first sight one does not take them for abnormal. The old woman just mentioned, for instance, was very polite to the doctor, and found fault when another patient behaved less respectfully. When asked for an explanation of the reproof, she was unable to give a clear one. Her conduct was obviously determined intuitively.

Derangements of judgment are absent, or present to a small extent only, at the beginning of the disease, and to this must be ascribed the fact that the patients observe their own deterioration. This is also the case in normal old age, but with these patients to a much greater degree. They frequently look forward to the future with great fear and uneasiness. Later on, when the intellect is further broken down, this feeling of insufficiency disappears.

Senile dementia is not always, even at the beginning, so strongly localized in defects of memory. There are other forms which are most probably connected with the character in a state of health. Well known are firstly those patients who, by their bad temper, irritability and distrust, become unsuited for social intercourse; secondly, the patients who come into conflict with the law, in

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consequence of serious moral defects such as outrages on children or exhibitionism; and thirdly, those who cannot possibly remain in their home surroundings on account of their nocturnal unrest, which entirely disappears in the daytime.

Besides these we have *senile melancholia*, which is accompanied by severe attacks of fear, which are to be considered as aggravated forms of normal affect-conditions. Here especially the feeling of mental and physical decay comes to the fore. They feel useless, and no longer able to do anything. Delusions of illness, sin and poverty with a strong tendency towards suicide are often the results of these ideas. Derangements of the intellect are often clearly visible.

In the *paranoid states* the mistrust, the jealousy, the suspicion and the irritability give rise to persecutory delusions. These states are distinguished from real paranoia by the small amount of systematization, or by the complete lack of this, as a result of intellectual dementia. These states, too, develop gradually from the normal disposition of the character.

The *presbyophrenia* of Kahlbaum is contrasted with hebephrenia. This disease is characterized by distinctly retrograde amnesia, the derangements of impressionability and retentiveness; further, by the severe disorientation for time and place, the patients being ignorant of the day, hour and month, and unable to find their way about their own house; and finally by confabulation, which often occurs in ordinary conversation, but if not can easily be stimulated by suggestion. These states are also often accompanied by nocturnal confusion and unrest.

Arterio-Sclerotic Dementia.

Closely related to senile dementia is the *arterio-sclerotic* form. Vascular changes are seldom lacking in old age, so that in autopsies of senile dements one generally finds arterio-sclerosis also. The pure forms of arterio-sclerotic dementia differ from the senile. They are above all characterized by neurasthenic symptoms. Complaints of physical and mental fatigue, diminution of working power and need for rest are accompanied by increased irritability, together with insomnia. The weakness of memory, the inability to think of names, the forgetting of appointments, etc., which accompany this neurasthenic picture are keenly felt. The patients get uneasy, and are even more upset over these deficiencies than the senile dements. A very frequent aberration is severe depression, which may continue during the entire course of the disease. They seek medical aid, and frequently allow themselves to be reassured for a time. But the depression and inhibition are frequently so great that this state assumes altogether the

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appearance of melancholia and can hardly be distinguished from it. The accompanying disturbances of memory which also exist in less depressive states, may then serve as a guide. Moreover genuine melancholic attacks seldom occur for the first time at such an advanced age. There are also distinct disturbances in the patient's actions. The coordination of finer movements is lessened, and it is to be expected that these disturbances will first occur in the two functions which rest on accurate coordination. These two functions are speaking and writing. Speech becomes slower, more laborious, less articulated, clumsy; the consonants are no longer pronounced distinctly, and very often there are also slight aphasic disturbances. The patients can only with difficulty find the right word. The writing is indistinct, and when the patient writes for a considerable time without interruption, fatigue sets in, the letters become smaller, and less pressure is applied. These states run a progressive course, and very often there are sudden aggravations, in consequence of slight hæmorrhages or of thrombosis. Vertigo, aphasic disturbances, etc., which for the most part disappear again, but of which there generally remains some trace, make the course irregular. Very frequently there also suddenly occur more severe hæmorrhages, which are then accompanied by hemiplegia, and which aggravate the entire situation. It may also happen that this entire preliminary state with its slow retrogression is absent, but that a sudden apoplexy occurs, which leaves behind it a distinct dementia after recovery from the acute stage. This is the so-called apoplectic dementia. One of the most conspicuous symptoms is emotional incontinence. When addressed the patients begin to cry, or in some cases to laugh. They can control themselves no longer. Of course, in consequence of the attack all kinds of other serious symptoms, for instance aphasias, may occur, which give a peculiar cachet to the dementia.

General Paralysis.

Dementia paralytica has quite a different aspect from senile dementia. Whilst in that form of the disease the disturbance is at first limited more particularly to the memory, giving us the right to speak of a systemic aberration, in the case of paralysis all the psychical functions are affected from the beginning. We therefore speak of a global dementia, which extends to the memory, the judgment, the emotional life, and the expressions of the will, which are all affected at the same time, but not all to the same extent. This diffuse character is the reason why paralytics, in contrast with senile dements and arterio-sclerotics, generally lose

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at an early stage their insight into the disease. They do not become uneasy and do not seek medical assistance. If they do so, on the advice of their relations for instance, they attach no importance to the advice given. With regard to the sequence of the symptoms of regression—Ribot's law—they agree with the senile dements. In both cases the most recently acquired functions are lost first, though in paralysis this is not always easy to note, as the progress of the disease is more rapid. I do not propose to enter into the various forms—simple dementia, the depressive, the hypochondriacal, and the expansive forms; they come into the province of special psychiatry.

In addition to the global character, which, especially in the early stages, distinguishes paralysis from senile dementia, there is another important difference. Senile dementia is characterized by loss of memory and by a more difficult functioning; the mental stock constantly decreases. In paralysis this is also the case in the long run, but at first another disturbance is more especially noticeable, namely, a loss in the interconnection of the psychical functions. The apprehension, the memory, the intellect, the judgment, the character, the phenomena of the will have developed under the constant formation of associations. Now it is these associations that in the case of paralysis are deranged first of all and most strongly. The beginning of paralysis is thus not so much in the first place to be sought for in a destruction of the stock, but rather in a loss of connection between the mental activities. In consequence of this the power of conception is disturbed. External impressions are recognized more slowly and with greater difficulty. This can easily be demonstrated by means of the light-box. A plate with ten objects is shown for one second. Immediately after, the objects which have been seen must be noted down. This test is applied ten times every day for ten successive days, each time with a different plate. A paralytic gave 25% correct and 28% incorrect reproductions, a normal person 33% correct and no incorrect ones. This shows that the correct memory images required for recognition are not so easily called up by external impressions in the case of a paralytic, whilst, far more than is normally the case, objects are mentioned which have little or no connection with the images shown. This is a disturbance in association. Like Gregor, I have repeatedly been able to convince myself that the impressionability in the earlier stages of paralysis is not much affected.

This limitation of the power of association is also the cause of disturbance of the power of recollection. Many associations have arisen through simultaneity and similarity in connection with time and place, and it is therefore possible that one and the same

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recollection may crop up in various ways. The recollection, for instance, of a particular person may be prompted by the presence of others who are connected with him, by the surroundings in which we have seen him—in short, by many circumstances which form a link between him and ourselves. When, therefore, associations are lost, as in paralysis, recollection will be brought about with greater difficulty. The most recently formed associations disappear first. The disturbances of paralysis begin in the same way in every other field.

The changes in character, such as irritability, sensuality, criminality (offences against property and morality), point to a return to the primitive infantile character, in which egotistical and vital tendencies are very prominent. The altruistic tendencies, the sense of duty, the feeling for ideals, for the fate of others and the community, which have gradually and slowly arisen during the development of the child, and have brought about the building up of the character, are no longer called up. There is with paralysis a gradual relapse in inverse order of the awakening of the qualities of character.

These aberrations of character show themselves quite early, often when other aberrations are scarcely noticeable. This is in accordance with the fact that the character develops later than the other psychical functions.

Disturbances of judgment occur, as is known, in many forms in the case of paralysis. The insight into the disease is lacking, or is only present to a very slight extent. Not infrequently the patients are full of complaints about some disturbance of no moment—for instance, about a small furuncle—whilst nothing is said of much more serious symptoms, which directly or indirectly threaten their very existence, such as disturbances of speech, hemiplegia, ataxia, etc. The associations proper to these deviations are not called up. The same is the case with the delusions which occur in many forms. The patient who believes himself to be a king or an emperor occupies himself with the work of a servant. The idea that a royal personage has people to wait on him does not occur to him. Another of my patients can do everything; nothing is too difficult for him; he is emperor, king, czar, lord of the universe, God, even above God; yet he asks humbly for a cigarette. The simultaneous megalomaniacal ideas are contradictory, and no single one of them calls up the appropriate associations. The interconnection is destroyed.

The important motor disturbances, which first show themselves in the finer and most complicated movements, are not due to palsy, but to a lack of coordination. Each muscle separately is

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properly contracted. The most recently learnt movements, which through long training occur in an accurately coordinated form, are first deranged. Speaking becomes ataxic, the patient stumbles over the words, the lips quiver, the writing is irregular, the movements of the hands are clumsy, the finer movements, such as threading a needle, are no longer possible. This can be demonstrated by drawing over a circle with a drawing pencil. Fig. 5 shows how the pencil should be used. In Fig. 6 the drawing on the right is by a normal person; that in the centre is by a paralytic; the one on the left is by the same paralytic after malarial treatment.

An important feature of paralytic dementia is the occurrence of paralytic attacks. These may have an epileptiform or an apoplectiform character; fits with tonic and clonic convulsions may occur, but the patients may also suddenly fall down and awake again

FIG. 6.

with a hemiplegia, sometimes with an aphasia as well, which in a longer or shorter time may be partly or entirely cured. Alzheimer considers the attacks as acute aggravations of the disease-process, and is supported in this view by pathological researches. In 1925 D. Wiersma pointed out that, if this view is correct, the psychical disturbances must be aggravated during a paralytic attack. More especially the disturbance of association, which we have seen to be the primary symptom of paralysis, must become aggravated. In the publication mentioned good reasons are given for thinking that we must consider the motor aphasia which so often occurs with a paralytic attack to be such an aggravation of the disturbance of association, especially of the association between the conceptions of speech movements and the conceptions of the things themselves. The epileptiform attacks, on the other hand, are to be regarded as sudden lowerings of the degree of consciousness, which agrees very well with our psychological view of the entire disease.

There is seen to be a remarkable agreement between all paralytic disturbances. Apprehension, memory, judgment, the character, the expression of the will are simultaneously, although not to the

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same degree, affected, and the cause of the aberration of all these functions must be sought in defective association. This is accompanied by a reduced psychical after-effect—that is, a slighter secondary function. Apprehension is deranged because the after-effect is too slight to complete the observations; the memory is deranged, because some connections are idle, owing to defective secondary function; delusions are mutually contradictory or in contradiction with the patient's acts, because the appropriate ideas have too weak an after-effect, and are therefore not called up; the after-effect of the altruistic thoughts is too slight to oust the egotistical ones. Everything shows that weakening of the psychical after-effect is responsible for the aberrations of paralytic dementia, and that this must be regarded as the primary psychical disturbance.

And now the question must be answered whether there exists a predisposition for paralysis—in other words, whether there is a pre-paralytic character.

It is well known that a particular pre-psychotic character is present in the functional psychoses, such as melancholia, mania and paranoia. The symptoms of the disease can be distinctly shown in tendency in a state of health. A gradual transition from normal old age to senile dementia has been pointed out. We have also been able to discover the rudimentary symptoms of the epileptic character within the bounds of health. The fact that not every luetic patient gets paralysis may have various grounds. According to some the nature of the virus, according to others predisposition is of importance in this connection. It is not unlikely that both arguments have something in them. The presence of this predisposition is conceivable in two ways, namely, as a consequence of unfavourable external influences (trauma, over-exertion, poisoning), and as a result of heredity. In both cases the resistance against the luetic virus is diminished. If this diminution exists on the physical plane, it must be present on the psychical plane also. The investigation into the mental predisposition of paralytics is, therefore, of scientific importance. I possess pre-psychotic psychograms of eighty-nine paralytics, which I have compared with the material of the heredity inquiry, with the following results:

The *activity* of the pre-paralytics deviates but little from the average activity of the subjects of the inquiry, except in a few qualities. As the annexed table shows, they are much more vivacious, considerably more impulsive and resolute. These last-mentioned deviations are doubtless to be largely attributed to the strength of the primary function.

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Activity.

	Pre-paralytics. %	Average. %
Vivacious	63	41
Diligent	75	76
Always busy	60	63
Quickly seizing	69	57
Persevering	49	47
Impulsive	54	39
Resolute	65	52
Average	62	54

The *emotionality* is decidedly greater. This is especially true of violence and irritability (see table). These functions also, as is well known, are very strongly promoted by the primary function.

Emotionality.

	Pre-paralytics. %	Average. %
Emotional	64	53
Violent	52	42
Irritable	61	44
Gloomy	10	6
Unstable	30	33
Average	43	35

The *psychical after-effect* is very greatly reduced. This is shown by practically every question. We must therefore assume that pre-paralytics have strong primary functions and weak secondaries.

Primary Function.

	Pre-paralytics. %	Average. %
Sooner consoled	75	37
Quickly reconciled	74	42
Variable in sympathy	30	19
Susceptible to new impressions	42	25
Great plans	39	13
Immediate results	39	29
Contradictory	32	13
Average	47	25

The *intellect* of pre-paralytics does not deviate from that of the average person.

Of the *qualities of character* the lower tendencies are seen to be much stronger. The vital and the egotistical are stronger, the altruistic and supra-social are weaker than the average.

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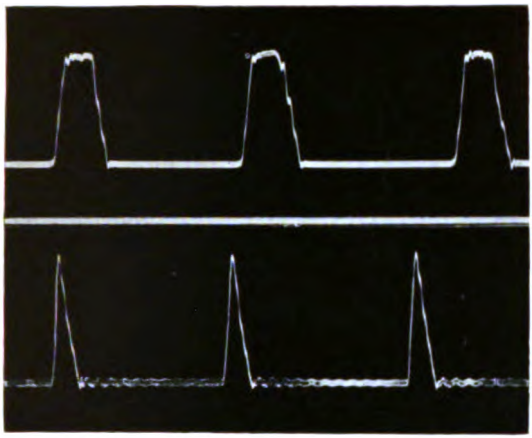

FIG. 8.

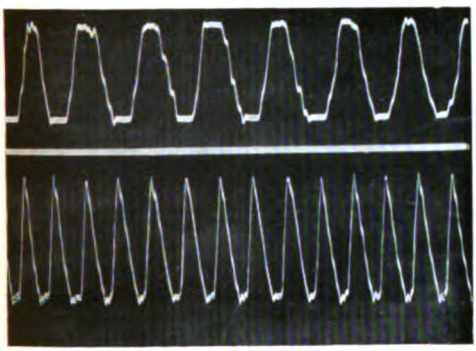

FIG. 9.

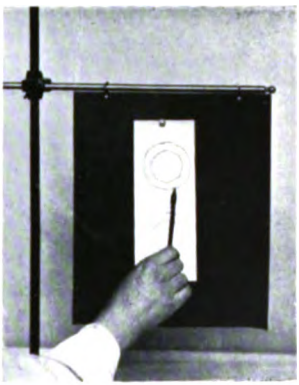

FIG. 5.

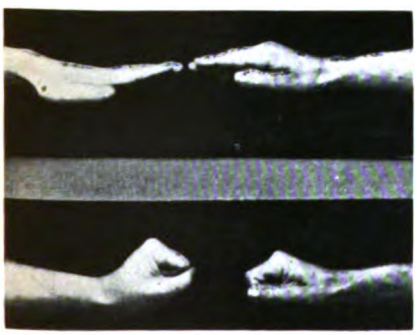

FIG. 10.

FIG. 7.

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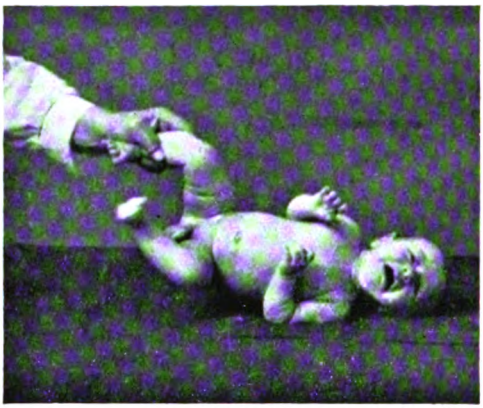

FIG. 11.

FIG. 12.

FIG. 13.

FIG. 14.

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Tendencies.

	Pre-paralytics.	Average.
	%	%
Fond of eating and drinking	63	39
Licentious	37	5
Self-satisfied	72	31
Vain	47	20
Ambitious	40	33
Avaricious	44	18
Greedy	8	3
Domineering	30	22
Talk about themselves	20	11
Average	40	20

Summing up, we may say that the pre-paralytic differs from the average person in the weaker psychical after-effect and in the strengthening of the lower tendencies.

What resemblance is there now between the pre-paralytic and the paralytic states? From the above we have already seen that the character deviates in both cases in the same sense from that of the average person. The egotistical tendencies, instability in thinking and acting, lack of balance, impulsiveness, violence and irritability, while on the other hand the subject may be excessively manageable and suggestible—these are found in the disposition of pre-paralytics also, and are therefore, just as in the case of paralysis itself, to a large extent dependent on deficient psychical after-effect. It must not be overlooked that the greater emotionality, the stronger primary function, the lack of inhibition, the stronger vital and egotistical tendencies of pre-paralytics might also be the cause of a greater chance of luetic infection. From an investigation of fifty luetics who have not been attacked by paralysis, it was found that these patients showed a somewhat greater emotionality and less psychical after-effect, but that this difference was only slight, and did not correspond to the great deviation of pre-paralytics. I therefore think that there is reason to seek the primary psychological predisposition to paralytic dementia in a morbid decrease of the psychical after-effect.

Epileptic Dementia.

An investigation made years ago into the psychology of epilepsy showed that the symptoms of epilepsy are to a great extent dependent on lability of the attention. The constant occurrence of this lowering, in spite of the variation of all the other symptoms, makes it probable that the sinking-in of consciousness is primary, and that all the other symptoms are dependent on it. Is, then, epileptic dementia, which is accompanied by divergences in temperament, intellect and morality, also dependent on the greater

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lability of the attention? These divergences are frequently so characteristic that one can immediately recognize the epileptic from them.

The aberrations of temperament reveal themselves in an exceptional slowness in thinking, speaking, and acting, in a great degree of obstinacy, changeable mood and irritability. The intellectual aberrations are characterized by a great degree of dullness, narrow-mindedness, prolixity, verbosity and inferior memory. On the moral plane the patients show exceptional egocentric tendencies. They are vain, egotistical, self-satisfied, suspicious, exaggeratedly polite.

Now if the lability of the attention is the cause of these aberrations, then the same symptoms, if only in a rudimentary form, should be found in normal persons with a greater lability. The lability of the attention may show itself in two ways: firstly by greater absent-mindedness, and secondly by less activity. In the severer forms of epilepsy both these phenomena can be noted in ordinary conversation. The patients wander in speech and answer slowly. In slight cases this may be easily determined by experiment, by the reaction to scarcely appreciable stimuli.

Now if this absent-mindedness and lessened activity are of such importance for the qualities of character in epileptics, it is to be expected that within the bounds of health the absent-minded, non-active people will possess in a greater or less degree epileptic qualities of character. This question can be answered from the heredity inquiry.

For this purpose we need only segregate the absent-minded, non-active persons. Furthermore, I have at my disposal psychograms of fifty epileptics taken at an early stage of their disease. This investigation shows that the absent-minded, non-actives come, in respect of all psychical functions, the intellectual, the moral and the emotional qualities, between epileptics and normal persons.

For the intellectual function this is clear. The power of comprehension, the practical actions, the power of observation and the memory deviate in the same sense from the normal in the case of both epileptics and absent-minded, non-active persons, and the narrow-mindedness, the tendency to talk as others do, the lack of wittiness, the long-windedness and the repetition of the same stories are present in both.

With the moral qualities this is also the case. This is shown by the conflict between thought and action, the self-satisfaction, the vanity, the selfishness, the affectation, the untruthfulness, the tendency to talk of themselves and the excessive politeness.

This is also seen in the emotional qualities, such as obstinacy, irritability, variability of mood and peevish behaviour.

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Schizophrenic Dementia.

It has been doubted whether this may be called dementia. Very often there can be no question of an intellectual loss. The memory remains good for a long time, and orientation is unimpaired. Nevertheless there are curious disturbances in thinking, feeling, and acting. The disjunction, the blocking, the autochthonous thoughts, the feeling of withdrawal of ideas, the neologisms and paralogy are signs of a lower kind of thinking, which we find to some extent in normal life. In the lower degree of consciousness in dreams, for instance, disjunction, neologisms and paralogy are not unknown phenomena. The schizophrenic patients are also in a state of lowered consciousness. They are autistic, they take no notice of anybody. They are indifferent to their surroundings. All their thoughts and actions arise independently of the conscious will-motives. The forms in which this weak-willed conduct may manifest itself are very different, as the following disturbances show.

In *stupor* the will and thought functions have practically disappeared. Voluntary movements, such as walking, speaking, shaking hands, etc., are no longer made. The patients lie quite still, are incontinent and have to be artificially fed. A limb, if lifted up, falls down limply. There is a general relaxation of the muscles. Schizophrenic stupor may also be accompanied by muscular rigidity and negativism.

Catalepsy is the tendency of a part of the body to remain in any attitude into which it has been put. A raised arm remains in that position until the muscles are exhausted. The patient can be made to perform all kinds of movements, little resistance being observable. This is called *flexibilitas cerea.* The cataleptic phenomena are due to a heightened suggestibility.

Echo phenomena consist in the blind imitation of movements, in the repetition of words or sentences, or in the imitation of noises (coughing, sneezing, etc.). The impressions are accepted without control. The conscious will-impulses, which normally work inhibitorily, are not of a sufficient degree of consciousness.

Automatic movements.—An arm, for instance, set moving in a circle, does not come to a stop, or not for a long time.

Bizarre and mannered movements may occur in many forms. They agree with the bizarre habits of thought and the curious expressions. The actions manifest themselves in unintelligible expressions of the face and in strange attitudes.

Stereotypies.—A distinction is made between stereotypies of attitude and of movement. In stereotypies of attitude the patients remain for a long time in the same curious position. The head or

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the body is bent, they stand on one leg, sometimes with the hands in the air, etc. To these belong also the mask-like face, the compression of the lips, the hebephrenic laugh, etc.

The stereotypies of movement are actions which constantly recur in the same way; upward and downward movements of the body, twitching of the mouth, the making of noises with the tongue and the lips, clapping the hands, running round in a circle. These stereotypies also occur in writing and speaking. The same words, sentences and letters are repeated again and again. For this, too, the lowering of consciousness and in particular the sinking-in of the will-function is responsible.

In *suggestibility*, far the greater part of the abnormal actions mentioned come about without control. The conscious will-function is relaxed; there is no sober reflection, no deliberation; there is no weighing of motives. When external influences are accepted without control, and the counter-motives, which should normally crop up, are missing, we speak of a heightened suggestibility.

Negativism shows itself in opposition to external influences, for which likewise there is no motive. The patients withdraw from all approaches. They do not answer questions. They resist feeding. When urged to eat they refuse food. When alone, they begin to eat. They will not have their own food, but often want that of a neighbour. They dirty themselves and refuse help. They often answer in the sense of paralogy—that is to say, the answer shows that the question has been understood, but the answer is wrong. Remains of food are retained in the mouth.

These disturbances of the will, to which many others might be added, may be divided into two groups. Catalepsy, echo-phenomena and automatic movements are brought about by external influences. The stereotypies, the bizarre and mannered movements come from the subconscious mental life of the patient. The first arise from hetero-suggestion, the latter from auto-suggestion. Both forms are frequently found in the same patient. The auto-suggestions are movement-expressions which are lying ready in the subconsciousness, and now come up unchecked.

The low level of consciousness must be considered as the primary cause of this schizophrenic thinking and willing, since these disturbances are also found in other diseases with lowered consciousness. The oligophrenes, the cases of acquired dementia, the alcoholics, the dull patients suffering from increased intracranial pressure (tumour) are in a high degree susceptible to suggestion. We must therefore assume that in schizophrenia the hetero-suggestive symptoms, etc., as well as the auto-suggestive symptoms, arise owing to the weakening

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of the conscious will-expressions. The automatism is here greatly heightened. We might speak of a hyper-automatism. The vital expressions reveal themselves in the mechanism lying ready in the subconsciousness, or in suggestion accepted without control. The patient's own volitional life, the personality, recedes altogether into the background.

Parkinsonianism.

It has frequently been pointed out that there is a great resemblance between the schizophrene, katatonic phenomena and the after-stage of encephalitis lethargica known as Parkinsonianism. The chronic after-stage of this disease may appear in the form of hyperkinesis or of hypokinesis. The hyperkineses show themselves in the form of choreic, athetotic and myoclonic movements.

It is well known that these disturbances are especially localized in the basal ganglia, and probably most distinctly in the putamen and the nucleus caudatus. It does not come within the scope of this lecture to discuss more in detail the anatomy of these disturbances. I will only point out that in other hyperkinetic aberrations of movement, such as the chorea of Huntington and choreic movements after affection of the brain and lues, and probably also in chorea minor, changes in the basal ganglia must be assumed.

Much more frequently than the hyperkinetic after-stage, the hypokinetic state, or Parkinsonianism, develops. This state is characterized by a general rigidity of the muscles, which is plainly to be seen in the attitude and in the fixed expression of the face.

Attitudes once assumed continue for a long time unaltered. The head and the arms remain raised for a long time without support.

The movements become slower, the contractions of the muscles occur later and last longer than normally, as is to be seen in this figure in the remaining contraction of the tibialis anterior, the so-called tibialis phenomenon when the foot is brought into dorsal flexion. This can also be demonstrated by registering the squeezing movements in an air-balloon. By squeezing the balloon, air is driven out of it, which sets in motion a pen writing on a drum.

In Fig. 8 the squeezing movements of a patient with Parkinsonianism and of a normal person have been photographed. The difference in movement and relaxation is evident.

Successive movements cannot be carried out rapidly. There is a disturbance in diadochokinesis. The hand is opened and closed slowly.

In Fig. 9 the squeezing movements in the balloon, in as quick succession as possible, of a Parkinsonian and of a normal person have been registered.

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A third disturbance is the loss of associated movements, which normally arise automatically. In clenching the fist the normal stretching movements are lacking. By means of these stretching movements the points of insertion of the flexors are brought farther apart, so that the closing can be performed with more power.

In stretching the fingers, flexion of the hand is lacking. This flexion has the effect of separating the points of insertion of the tensors more widely, by which means the stretching can be carried out with more strength.

Vigorous opening of the mouth is normally accompanied by a simultaneous raising of the head, a raising of the eyeballs, and a drawing up of the eyebrows. These associated movements are nearly or absolutely absent.

In agreement with these disturbances in the volitional expressions are the psychical deviations. The patients think slowly, they complain of thinking with difficulty, they cannot transfer their thoughts, and they can only occupy themselves with one thing at a time. It is as if their thoughts were held fast. Conversation drags; thoughts will not occur to them. It was possible experimentally to note considerable deviations in an investigation of forty patients. As this table shows, the reaction-times are lengthened. The number of words spoken and the number of additions of units in a given time is very greatly reduced. The extent of consciousness is reduced. The number of objects that can be noticed at a time is much smaller. Patients cannot get rid of their thoughts. One patient, in praying, could not get beyond the first line. Times out of number they have to repeat the same words. By association tests these deviations may easily be noted.

Investigation of 10 *Encephalitics and* 10 *Normal Persons.*

	Average reaction-times.	
	Encephalitics. (Secs.)	Normal. (Secs.)
50 word-stimuli	3·2	1·6
50 light-stimuli	0·540	0·296
	(Number.)	(Number.)
Words spoken in 3 min.	22	50
Objects simultaneously seen in 1 sec.	1·6	3·5
Additions of units in 1 min.	22	44

Repetitions in the free association-test on the stimulus-word *horse*: Cow—ass—sheep—goat—pig—dog—hare—cat—*pig*—*goat*—*sheep*.

These statements, which were necessarily short and incomplete, show that there is, in many respects, a similarity between Parkinsonian and schizophrenic thinking and acting. The poverty of movement and thought, the rigid exterior, remind one of stupor.

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The rigidity might be confounded with that of negativism. The holding of the head and of the extremities without support may be mistaken for catalepsy. When we add further that in both morbid conditions there may be an excessive secretion of sebum, sweat and saliva, there are seen to be considerable resemblances. But on the other hand there is a difference of such importance that there can be no question of identity.

The schizophrenic disturbances in thinking and acting are, as we have seen, expressions of mechanisms, lying ready or suggested, which come into the consciousness and on which the will-impulse has little or no influence. The intellectual stock is present, but the regulative action of the higher mental function is absent. The influence of the will has been suspended.

The encephalitic motor disturbances are of quite a different nature. They occur in two different forms. In the one case the patients can only with difficulty concentrate their attention. Their attention is spread over a great many will-impulses, and then come the spontaneous movements of chorea and athetosis, with a variety of other movements. In the other case the attention is too sharply directed to a few will-impulses. There is then no energy left for the associated movements or automatisms. There is thus a poverty of movement, a narrowed motor consciousness. Two movements cannot be carried out simultaneously. The same poverty is noticeable in thinking. The power of imagination is slight; the patient can only think of one thing at a time, etc.

These two disturbances are the result of a demolition by the encephalitic disease process. The question is, therefore, justified whether there are not also stages in the building up of the volitional function, which, if not altogether, then at any rate very nearly, agree with the above-mentioned abnormal motor phenomena. The answer to this question must be in the affirmative.

The newly-born child shows general rigidity. The muscles of the legs, of the pelvis, of the neck, of the face, etc., are stiff. They can hardly be moved at all passively, and the active movements take place slowly. This stiffness corresponds to the stiffness of Parkinsonianism (Fig. 11).

At the same time the child makes involuntary spontaneous movements, which spread all over the body (Fig. 12).

These movements of a normal child are exactly like the movements of athetosis and chorea. The analogies of these hyperkineses of encephalitis are therefore found in normal life.

The voluntary movements develop slowly from the spontaneous ones. The movements become more and more differentiated. In place of stiffness come suppleness and flexibility, in place of the

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spontaneous movements come voluntary, accurately measured movements, with the normal associated movements and automatisms. In Figs. 13 and 14 the gait of a little boy of 16 months is still stiff and clumsy, without automatic associated movements. The gait of the girl of 2 years and 7 months, on the other hand, already shows distinct automatic associated movements of the arms.

We thus see that the building up in the case of a child takes place in the inverse order to the breaking down in encephalitis. With the child the mechanized automatisms, which arise through training, are not yet developed; with the Parkinsonian, on the other hand, they have disappeared. They are, however, not lost, for it is often possible, by great pressure or through emotion, to make the will-impulse so strong that movements, with their accompanying automatisms, are performed quickly and smoothly. When running at command, when strongly urged to eat, when running away from danger, when speaking under excitement, the accessory associated movements appear distinctly for a short time. Why should these automatisms disappear in Parkinsonianism? In normal persons they are lost when the entire attention is claimed for the movement to be performed. When walking on ice or over a narrow plank the normal associated movements of the arms disappear. Piano-playing is easier at home than in public. In the same way the Parkinsonian's entire attention is claimed for his voluntary movements. In this way the poverty of movement, the narrowing of the motor consciousness are brought about.

In this second lecture it has been my intention to show that the symptoms of the different forms of dementia can be found, although only in a rudimentary form, within the boundaries of the normal, and that this is also the case with the disturbances of the will in schizophrenia and encephalitis. The primary affection is to be sought, from a psychological point of view, in the lowering of consciousness.

I agree, therefore, with Prof. Spearman and Dr. Hart that it is very difficult to differentiate the several forms of dementia, but I believe that by a comparison of the various forms of dementia with normal persons this differentiation can be made. For we must assume that there is not an essential difference, but only one of degree, between sane and insane.

The normal and abnormal psychical functions are dominated by just the same laws. It is therefore an undeniable advantage for every psychologist to take notice of the so-called psycho-pathological phenomena.

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SOME EXPERIMENTS WITH SUGGESTION AND ASSOCIATION TESTS IN THE FEEBLE-MINDED.*

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When I was asked to either open a discussion or read a paper, I felt a great difficulty in choosing a subject, and I think my choice has been influenced considerably by the interest shown by the public in mental defect. Probably all of us are conversant with some of the various methods that are in use for testing the intelligence. These appear to resolve themselves into either valuing or "marking" by plus or minus or using numbers. It has always appeared to me that in marking by plus or minus signs it is very difficult to form an opinion as to whether it should be + ! or + ?, whereas it is easier to use figures. For instance, you say to a child, "What is the difference between an orange and a banana?" and you desire two comparisons to be given. If you give one mark for a definite comparison and no marks for an indefinite comparison it appears fairly simple, whereas if you are marking by the plus signs and one comparison is correct and the other wrong, it appears to me to be difficult to tell which of the plus signs one should use in marking the whole result. I therefore use the point scale test of Yerkes and Bridges. This method, with some slight modifications of my own, I and my colleagues have used in all the cases. I do not believe that a child cannot be tested until it has reached the age of five years. In this I have some support from recent American workers, and a method of testing the young child may yet be devised. Therefore in marking I do not, as Yerkes and Bridges do, start from five years of age, but as though the child could think from birth. The two tests which I hope to discuss at this meeting are those of association and suggestion. These two units appear to offer some interesting theories which might be worthy of further investigation. In a sense these two tests are dependent on each other psychologically and throw some light on

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the elucidation of some of our problems, and may perhaps enable us to form deductions of some diagnostic and prognostic value.

In discussing the value of suggestion as a means of investigating the mentality of the patient, the terms we use must be concise. Suggestion and suggestibility are two different processes, and therefore we define them arbitrarily. By suggestion I mean the sum total of stimuli received—(*a*) by the five senses, which might be designated hetero- or external stimuli, (*b*) from the autonomic system which are outside consciousness in health, but in illness enter into consciousness as pain. These may be termed auto-suggestions. It is further possible to suppose that nervous impulses pass from the sympathetic system by the carotid and cavernous plexuses to the pia and sub-pial felting, and reach the cells of the upper layer of the cerebral cortex, and thus enter consciousness. If this hypothesis is tenable one may regard ideas as nerve impulses received and modified by highly specialized nerve-cells and adaptable by environmental influences. This is supported by the fact that animals not possessing the supra-granular layers of the cortex deposit their waste products whenever the impulse is perceived or auto-suggested to them by the autonomic nervous system, whereas in the higher mammals, and to a greater extent in man, in whom the supra-granular layers are well developed, such impulses can be inhibited voluntarily. And thus one might possibly argue that the autonomic stimuli are at the root of auto-suggestion. If this be allowed as an hypothesis, then the condition of the body we call illness may be regarded as the sympathetic system becoming conscious and ideated through the medium of the hetero-stimuli. Take the case of a woman complaining of pain in the abdomen which she attributes to cancer. This idea arises through the auto-suggestion caused by over-action of a normal process in her abdomen plus the hetero-suggestion of having either read or heard of cancer. Any animal may feel pain, but it is only in animals having the supra-granular cortical layer pyramids that ideation is possible. In the lowest types of the feeble-minded the disregard of cleanliness and the lessened reaction to painful stimuli can be so explained. In the medium and higher grades the hypothesis is supported by the lessened control they exhibit in curbing their instinctive urges. In the post-encephalitic cases we frequently find that all or most of their control of the instinctive urges is lost. In these cases it often occurs that the idea we have stimulated by suggestion has no control over the instinctive urges or emotions. Suggestion may therefore be defined as the sum total of centripetal stimuli from an object or objects

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entering the mind, the autonomic stimuli being excluded in a hetero-suggestion when entering consciousness in illness. This hypothesis would therefore imply that suggestion is the stimulus, and suggestibility a property of the mind. Suggestibility, I submit, should be considered as something on which suggestion acts.

I felt it necessary to make these preliminary remarks although I am quite conscious they are very inadequate. They contain, nevertheless, the germ upon which I started some of my experiments. It appeared to me that as the mental processes in the mental defective are more primitive, it might be possible to use these cases as a means of investigation. The usual term used to denote the effect of suggestion on a person is that he or she is "suggestible" or "non-suggestible." Sir Henry Head pointed out that these terms were misleading, and that a better definition was "negative" or "positive" to the suggestion. There is, then, no necessity to define the term "suggestibility," but rather to consider it as a common mental factor in higher animals, which responds to a stimulus termed "suggestion."

Acting on this idea, and using the ordinary line test, I found to begin with that there was a varying response to this test in the feeble-minded. In the lowest defectives it was not possible to test it, as they had no realization of the idea of length, but in the medium and higher grades there were three different reactions noted: (1) As a rule the reaction was positive; (2) in some cases the reaction was negative; (3) some were normal, *i.e.*, they recognized that the first three pairs of lines were unequal and the last three pairs even. The intelligence did not appear to have much bearing on whether the reaction to suggestion was positive, negative or normal, as it was found that neither the medium nor the higher grades showed any one of the three reactions. It did not appear that the suggestion reaction was entirely dependent on the general intellect of the individual. The question that naturally arose was, "What factor or factors have an influence?" It occurred to me that the difference in reaction might be accounted for by the mental mechanism termed "transference," and if this were so the cause of the reaction should be looked for in the environment of the patient, especially as regards parents or parent prototypes, *e.g.*, undue spoiling (using the term in its wide sense of unduly protecting the child from the stern facts of reality) might make that child grow up positive to suggestion, whilst undue harshness would have a negative result. In the cases where reaction was normal, the hypothesis would be that the parents or prototypes were, as it were, working together—neither unduly spoiling nor repressing. To verify this, a large number of

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case-histories were investigated, and the attitude of the parents or prototypes to the tested individual was inquired into. It soon appeared that in the case of a markedly positive reaction there was some evidence of undue complaisance of one or other of these persons, and that in the negative reactions there had been repression. These findings, however, did not account for the so-called normal reaction which, though rare in the mental defective, did sometimes appear. Further testing for controls in the way of normal individuals appeared to throw some light on the problem. It was found that, in many normals, though the first three pairs of unequal lines were recognized as such, in the three equal pairs there was often in one pair an acceptance of the suggestion of the last being the longest, though the other two pairs were recognized as equal, or the reverse effect—that is, the opposite equal line to the one suggested was said to be the longest. Further, it was noted that even in the normal reaction, that is, where the recognition of the length was in accordance with fact, there was either a rapid acceptance of the suggestion of inequality in the unequal lines or a hesitation in accepting even the apparent fact. The histories that were accessible of all normals revealed the same spoiling or repression in the environment that were found in mental defectives. It occurs to the mind at once that this is so simple a test that it must lose its utility if its nature is known to the tested individual, but, strange as it must seem, this is not the case, as I have explained the test before making it and have found that still the same positive or negative reactions occur; in fact, I myself, owing to some of the lines in a printed copy of the point scale being accidentally transposed, reacted in a positive manner (accepting the suggestion of inequality in two lines, which in fact were equal). The following three instances I have observed also emphasize this point:

(1) A certain barrister who had disputed the findings of the point scale test demanded a definition of the statement that the person tested was positive to suggestion. The request was made to him that the definition should be demonstrated in court on his own person. This was declined at first, but on being pressed was accepted. The point was fully explained that there was no attempt to deceive, and that all he need do was to think when the suggestion was put that one line was longer and to say whether it was so or not. The astounding result was that even in the unequal lines he refused to allow that they were unequal, always saying that the longest was not so—in fact he showed a marked negative reaction to suggestion. It is interesting that up to the present I have only in one case known an individual attempt to measure lines when

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being tested, though all normals, if asked how they could detect the difference, say at once " by measuring."

(2) The second instance occurred in a student who was interested in intelligence tests, but had no practical knowledge, who, even though he had been only five minutes before told that the first three lines were unequal, when tested himself maintained that this was not so in the last pair of unequal lines, though in the even pairs he recognized the equality.

(3) I have seen one instance in an absolutely unmoral female who had frequently been in the hands of the law of such a negative reaction that she emphatically reversed every suggestion, and even when the lines were measured for her the negative state still persisted. There was in this young woman no other sign of mental deterioration. Unfortunately the full history was not obtainable, but it was known that she was brought up in an atmosphere of repression by a hostile father for many years.

Other instances could be given, but time and space do not allow.

It must occur to us all that the test is so simple that it must soon be known, but in this respect I would submit that infinite variations can be used with the lines in testing; moreover, if this method is effective as a test for the reaction to suggestion, its very simplicity is in its favour, as it does not involve any profound thought, but does test the balance between what we term suggestion and judgment. It may be argued that the reactions, positive or negative, to suggestion are of very little real value from a clinical point of view, but when taken in relationship to other faculties, as for instance the power of detecting absurdities and the association test, they may, I think, help us considerably in forming some estimate of the best way to deal with the patient, and in answering such questions as, " In what way is it possible to try and develop what mental power they possess? " " What is their ability to adjust to environment? " As an instance, if a patient has a positive reaction to suggestion and no sense of absurdity, it follows that they would be normal in a normal environment or *vice versâ*, whereas if they are negative to suggestion and cannot detect the absurd, the environment will have little or no effect; they will be unmoral, as there will be only the urge of the primitive desires; and they will probably need constant supervision and control. A further point of some interest occurs; that is, it is often found that the mentally defective are more amenable with one sex than with the other, and it is not always with the opposite sex that their amenability shows itself. Further, it is sometimes of importance to know how far the defective can be trusted as regards sex urges. I venture here to suggest that the reaction of the patient is largely a question

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of suggestion. The girl who has been under the control of a hostile father who has been the dominating factor in the environment is unlikely to be troublesome with the male sex, owing to her negative reaction to suggestion, whereas if the dominant father has been complaisant or unduly spoiling, the opposite effect in the attitude to sex will occur. The same argument applies to males if the dominant parent is the mother. This point may appear to be far-fetched, but if suggestion in the sense in which I have used it is another term for transference, to know the dominant parent or parent prototype will be important; this is especially the case since I believe it is now generally recognized that early environmental factors may have a great influence on the character of the individual, and since sex is one of the primordial urges or instincts. The term "sex" is here used in the Freudian sense. The attachment of the libido to one or other of the parents or prototypes will be of importance. I submit that it is possible to detect this tendency to fixation. This brings me to the second series of experiments, which might perhaps be termed "associative."

The ordinary association test for the feeble-minded (a variation of Jung's) is the method employed, and is well known to you all. The test is as follows: You say to the patient, "Now I want you to say as many words as you can think of in three minutes. I do not mind what words; any words will do. Do you understand? Now remember, any words will do." Then I give instances, such as cat, etc. The reason for instancing these words is that association may be broken. The test is then proceeded with as follows: The patient is asked "Are you ready? Now, remember you have three minutes, and I am certain you can think of a great many words." As regards mental defectives, the difficulty of this test in the higher grade is that words are produced quicker than they can be written. In the lower grade words can be taken down as fast as they are spoken. As the words are written the reaction-time between each word is recorded by making dots with a pencil. This dotting, I have found, eliminates the use of a stop-watch to a large extent. Further, it does not distract the attention of the patient or the examiner, as it becomes on the part of the examiner an automatic and regular action. As I attach great importance to the effect of suggestion on the patient, I do not think it advisable to encourage the patient by saying that I have known people who could produce 250 words in the stipulated time, as I think it possible this information may reduce the output of words by inducing a feeling of what can only be called inferiority.

The points that arise in using this test which are worthy of consideration and I believe are of value as channels for further research are:

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(1) The number of words having association one with the other. *Dog, cat, cheese, mice*, are obviously associated. So are *dog, cat, mice, rat, pig, hippopotamus, frog*. These instances are taken from two mental defectives, one of whom produced 48 and the other 70 words in the three minutes. The point to be noted is that in the one case there are four words directly connected, in the next seven. The other words produced in these two cases showed the same tendency—that is, to group themselves into four or seven words—and the reaction time was usually the same to prove each word. Occasionally words were given with no other words associated, or there was a marked alteration in the reaction time as compared to the rest of the associations. This point I shall return to later. The points I wish to emphasize here are (*a*) the number of words associated, and (*b*) the associative length is possibly indicative of the degree of intellect. This I think is borne out by the controls of normal people who also show variations in this associative length as it is called. It should be mentioned here that unless a dictaphone can be employed the examinee should be requested to say the words at such a pace as will enable them to be written. This, I admit, is a clumsy method, but as far as I have been able to observe, does not alter the results as regards associative length.

(2) The next point is the occurrence of blocks, that is, words either separated from the other associations by time reaction or words which appear to be entirely unconnected. To illustrate, one mental defective examined who had an associative length of eight words, and produced over a hundred in the time allowed, showed an abnormally long reaction-time to the words *policeman, bicycle, window*, and these words were totally unconnected with any other associations; they turned out to be the key-words to the fact that she had stolen a bicycle and made an attempt to escape by a window. That this blocking and also the occurrence of apparently unconnected words is of importance, will, I think, be confirmed by any who care to make the experiment.

(3) Having found the above-mentioned phenomena occurring consistently in examinations, it occurred to me that it might be an ambivalent equivalent of Jung's association experiments. The technique of Jung's association test is well known to you, and I need only say that Jung found that in a list of a hundred words associated by anyone, certain words could not be rapidly associated, also on repetition the reaction-word was forgotten. Further, it was demonstrated that the delayed time reaction to any word, and the forgotten word itself, were connected with a repressed complex.

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It also occurred to me that with Jung's association table the hundred words given must make a suggestion to the patient, and that this hetero-suggested influence would be eliminated if one could persuade the patient to supply his or her own words. Another advantage of the patient supplying his own words is that the words produced by the patient himself by their reaction-time showed the same blocking mentioned by Jung.

When testing the feeble-minded one expects in many cases to find them stumbling in their efforts to supply words, but this, I think, can often be distinguished from the alteration in the reaction-time due to emotional blocking.

Blocks in the associations of the mental defectives, as in the psycho-neurotics and normals, may be analysed by free associations, and the mental processes that are exposed to view by this method do not appear to differ in their formation.

As far as my experiments have gone, the results obtained seem to indicate that the medium and higher grades of mental defectives show reactions due to repression very similar to patients with a normal equipment, but the analyses show that the nucleus of the repressed material is always concerned with ego tendencies, and is of a most primitive nature. To illustrate this I may quote the case of a boy of 15, unable to read more than simple sentences, seldom able to do a simple subtraction sum correctly, unable to tell 6*d.* from 1*s.* or to retain more than three numerals in his memory long enough to repeat them. This boy produced the following associations in three minutes:

M* F F M F M M F
Dog .. cat .. mice cheese . breakfast handkerchief kangaroo elephant . cows

M M M M F
hippopotamus . film cinema light globe wineglass paper picture book feet chair fireplace windows trees ..... garden flowers lawn grass beds bottles lemonade barley-water ginger-beer curtains meat ..... treacle pudding ..... curtain rod lampshade nails ..... penny half-crown shilling sixpence Africa lens.

These 48 words show 4 words with long reaction times, *viz.*, trees 6 dots; treacle pudding 6 dots, meat 11 dots, nails 12. I have placed these words in the order of length of reaction-time, trees having the shortest and nails the longest. His associations on nails were: Nails you hang pictures on.
Nails you put in your boots.
Nails you put in sticks for jumping { *emotion.* / *annoyance.*

The boys used to laugh at me at school about jumping (*showed a good deal of annoyance but quickly became cheerful on associating him on meat*).

Meat means two things:—

Meat you eat:
Sunday dinner.
Uncle tells me I eat too much (*anger*).

Meet of hounds:
Hounds coming to our house.
My sister rode.
I stayed at home. I had nothing to do. They had eggs for tea but I did not (*anger showed*).

* The meanings of symbols M and F are: M = male, F = female.

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Trees:
Trees blew down in our garden.
I helped saw tree up.
I used to climb trees, got half-way up, could not get further. Slipped down.
At this point became sulky but after much pressing stated:
Mother told me I was not to climb trees in best clothes and brother laughed at me.

The points in this case seem to emphasize the tendency of all his lengthy reaction-times to lead to the same complexes, all very simple and primitive, but often with great emotional reaction. His associations on dreams have invariably led to the same primitive reactions. In fact this boy appears to have been arrested at a stage of development corresponding to that of an amiable savage.

I would submit that it is of value to know the tendencies that are most likely to raise emotion, as by knowing them you may proceed better with the education, as, for instance, by using the tendency to self-assertion in the way of pride to counteract the tendency to over-eat. Derision applied to either of these tendencies will raise an emotional reaction, whereas by appealing to his vanity it may be possible to check somewhat his greed.

The last point I wish to raise is that if the words produced by the association test are considered as symbols having male, female or neuter significance, and marked as such, it will be found—

1. That the number of male symbols compared with the female will give an indication as to which sex either spoiled or repressed the patient in early life.

2. That the neuter symbols appear to indicate the strength of the egoistic tendencies as opposed to the parental or family influence.

3. That if the male symbols predominate, it will be found that the father or his prototype has been the dominant factor in the family life.

A dominant parent who has been complacent to the child will cause it to grow up positive to suggestion, but a repressive dominant parent or prototype will produce a negative reaction in the child. The same argument applies to the female symbols, indicating a dominant mother or her prototype. The Freudian theory of symbolization determines the technique here employed.

In conclusion I wish to state most emphatically that I do not put forward any of this experimental work as conclusive. I only venture to suggest that further research may be worth while, as it seems to me it is time we ceased to label mental illness with a terminology which is mainly indicative of the way the sufferers show their emotional excess. Mania, melancholia and stupor are but terms expressing an excess of emotion—in the manic directed

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outwards, in the melancholic directed inwards, whilst stupor is an apparent lack of all emotional expression. To understand why these excesses and failure in emotional output occur is the point we must all aim at. Personally I am inclined to think that too little attention has been paid in the past to investigating dispositions and character traits, most emphasis being laid on the mechanism. There is, I submit, a great difference psychologically and I believe also physiologically in the fact that one manic patient cannot think in terms of time, place and person correctly, whereas another is able to do so. What this difference is can only be found in carefully examining individuals not only by physiological and anatomical technique but also psychologically.

It was with this idea in view that I have ventured to put forward this paper.

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THE PARA-CATARRHAL SYNDROME.*

By T. C. Graves, B.Sc., M.D., F.R.C.S.,
Chief Medical Officer, Birmingham Mental Hospitals.

It is exactly forty years ago since Dr. Guye, of Amsterdam, drew the attention of the Section of Otology, at the annual meeting of the British Medical Association held in Leeds in 1889, to the presence of certain mental disabilities, designated aprosexia, which may appear, both after as well as before puberty, in the subjects of chronic nasal disease. I submit that mental symptoms additional to those described by Guye are due to diseased conditions of the nose which produce a persistent catarrh.

Post-mortem examination of cases of mental disorder frequently reveals diseased conditions of the nasal sinuses; all types of inflammatory states have been found, at all ages from adolescence to senility, and associated with many types of mental disorder.

To a certain degree it may be said that acute inflammatory processes are associated with the acute phases of the mental disorder. My colleague, Dr. Pickworth, Director of the Research Laboratory associated with the Birmingham Mental Hospitals, has published evidence suggesting that infection may pass directly from a diseased sphenoidal sinus to the pituitary gland and hypothalamic region of the brain, the latter containing the head ganglion of the sympathetic nervous system.

In relation to these findings many physical symptoms met with in cases of mental disorder are explicable on the basis of toxic disturbance in this region, and recently I have met cases of sphenoidal sinus disease in which there was failure to give a normal response to pyrexial therapy, indicating functional inertia of the thermal centre in this part of the brain. Case-histories of newly admitted patients frequently contain references to nasal catarrh persisting from childhood, associated sometimes with a family history of nasal catarrh, to which we attach considerable importance.

* A contribution to the discussion on "Persistent Nasal Catarrh, Especially in Children." Section of Oto-Rhino-Laryngology Annual Meeting, British Medical Association, Manchester, 1929.

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In a typical case the sequence is as follows: Nasal catarrh, sometimes before or definitely following an acute infectious malady, such as measles or scarlet fever; later, headaches appear, then an acute exacerbation of headache is followed by mental symptoms, and so the case passes into an acute phase of mental disorder.

Sometimes before the onset of the mental symptoms, the catarrh apparently diminishes, pointing to the deeper extention of the pathological process responsible for the catarrh.

Examination of the nasal sinuses, shortly after admission, has demonstrated the existence of sinusitis in a number of patients amounting for the year 1928 to 33% of the admissions. In many cases, following irrigation, ventilation and drainage, with non-specific protein therapy in some instances, there has been an amelioration of or recovery from the mental and physical symptoms.

I submit summaries of a few cases of certified mental disorder at different ages to illustrate these observations. The surgical work was carried out by Mr. W. Stirk Adams, F.R.C.S.

Case 1.—Female, æt. 17 on admission. No insane relatives; mother suffered from menstrual headaches.

Measles at 5. Douching for nasal catarrh since 8 years of age. At about 17 had a vaccine for nasal catarrh and "nerves" and later developed a headache, succeeded by mental symptoms, which rapidly intensified to a condition of acute confusion with hallucinations and hyperacute excitement.

Septic tonsils and adenoids were removed and purulent antra were drained.

Definite physical and mental improvement followed, enabling discharge. Subsequent reports satisfactory.

Case 2.—Female, æt. 19 on admission. No insane relatives; a family history of nasal catarrh.

She had scarlet fever at 3, followed by otitis media and persistent nasal catarrh. Mental symptoms were shown early in her nineteenth year, and later intensified to a condition of acute confusion with hallucinations and excitement followed by a depressed phase with cacosmia.

Removal of septic tonsils and drainage of purulent sinuses was followed by clearance of depression and cacosmia.

Reports after discharge satisfactory.

Case 3.—Male, æt. 22 on admission. No insane relatives.

Two attacks of measles in childhood, followed by nasal catarrh, constant colds, rheumatic fever, osteomyelitis of the tibia, cutaneous sepsis and impaired vision. Nasal catarrh continued; attacks of tinnitus aurium. At 22, after a period of mild mental exaltation, he developed acute confusion with excitement and grandiose delusions.

Purulent sphenoidal, ethmoidal and antral sinuses were drained, and septic tonsils were removed. From then onwards he improved rapidly both physically and mentally and was discharged. Subsequent reports were satisfactory.

Case 4.—Male, æt. 26 on admission. No insane relatives.

A history of frequent colds from childhood, and persistent nasal catarrh. After a cold, aged 23, his conduct became erratic, and later definitely abnormal. Mental confusion with grandiose ideas increased in intensity, with fluctuations, during the ensuing years until admission, when purulent antra were drained and septic tonsils and adenoids removed.

A considerable mental and physical improvement followed. Following discharge reports of his progress have been very satisfactory.

Case 5.—Female, æt. 34 on admission. No insanity in family, except youngest sister, who developed a confused depressed psychosis associated with nasopharyngeal sepsis.

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The patient under consideration had measles at seven, and has had persistent nasal catarrh and repeated sore throats ever since.

At 30 a severe sore throat was followed by a progressive right frontal headache and reduction in capacity for work.

A month before admission she developed severe bilateral headache, followed rapidly by depression, fear, agitation and threats of suicide.

Septic tonsils and adenoids were removed and purulent antra drained.

The bilateral headache diminished after the operation, but persisted, in less degree, in the right frontal region, together with depression (which was more marked at menstruation). The antral wash-outs became clear. Later a course of non-specific protein therapy was followed by the temporary appearance of green pus in the right antral wash-out. The right frontal headache, which had persisted since the severe sore throat, now passed away, together with the depression and other mental symptoms, and there was no further nasal catarrh. She was discharged and later reports were satisfactory.

Case 6.—Female, æt. 35. Father suffered from persistent nasal catarrh. His sister committed suicide.

The patient had measles at 6, nasal catarrh since school age, and attacks of tinnitus aurium. At 34 influenza was followed by severe headache, which persisted. Nasal catarrh diminished, but anæmia increased, and a septic cutaneous rash appeared. Depression developed and became acute, rapidly passing into mental confusion with auditory and visual hallucinations and desperate suicidal attempts. Proptosis, especially of right eyeball.

Septic tonsils and adenoids were removed and an empyema of the right sphenoidal sinus was drained, and this was followed by clearance of confusion and hallucinations and cessation of the suicidal attempts. Proptosis diminished, anæmia passed away. Some depression persisted, but this cleared after non-specific protein therapy.

Discharged; subsequent reports satisfactory.

Case 7.—Female, æt. 42. No insanity in family.

Measles at 7 and scarlet fever at 13, persistent nasal catarrh, constant colds. At 21 an attack of depression. Headaches and otalgia continued with the chronic catarrh; attacks of gastritis occurred for several years. Mild depression reappeared at 41 and continued with increasing intensity. At 42 she made two serious attempts at suicide.

Septic tonsils were removed; both sphenoidal sinuses and the left antrum were drained for empyema.

Improvement followed, enabling discharge. Subsequent reports have been satisfactory.

I trust that these remarks have shown that symptoms of mental disorder may appear in cases of persistent nasal catarrh, and that the catarrhal state requires radical treatment if mental sequelæ are to be avoided.

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A SPECIAL METHOD OF INVESTIGATING THE STREPTOCOCCAL AND ACIDOPHILUS INTESTINAL FLORA: WITH RESULTS IN FIFTY-THREE MENTAL PATIENTS.

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INTRODUCTION.

THE ordinary method of making an emulsion of fæces in saline or broth and plating therefrom is of value in gross pathological infections of the bacillary and coccal variety. As a method of isolating the sum total of aerobic fæcal streptococci, it is, however, peculiarly incomplete. Anyone who cares to incubate a specimen of fæces in 1% neutral glucose broth and plate therefrom on successive days on to blood media will notice some very interesting facts. Whereas, in the majority of cases, coliform bacilli will grow therefrom in the first two or three daily platings, after a few days they cease to be recoverable and are replaced by streptococci of various types, sometimes later by staphylococci or moulds in pathological instances, and finally all that can be grown are Gram-positive bacilli or filaments. These bacilli are the lactic acid or acidophilus bacilli, and they have, by their production of acid and possibly by other lethal products, destroyed all aerobic bacilli except themselves. In time they, too, succumb, not apparently from hyperacidity, but from lack of pabulum. They can easily be kept alive by transplantation, to either human citrated blood-agar or glucose broth. Elsewhere* I am publishing a detailed account of this "acidophilus phenomenon," but a consideration of the annexed Table I will make tolerably clear the mechanism of this curious process. It is, in the main, a question of acidity, inasmuch as any germ which

* *Lancet*, London.

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produces a lower hydrogen-ion concentration (that is, a more acid medium) will inevitably destroy any accompanying germ which produces a less acid medium. For instance (see Table I), a mixture of *B. coli communis* and *Staphylococcus aureus* will eventually yield from glucose broth a pure culture of the latter organism, since *B. coli* produces a pH of not less than 4·0 in neutral glucose broth, whereas the staphylococcus can produce a pH of 3·8. Likewise a streptococcus producing a pH of 3·8 will oust a *B. coli* producing a pH of 4·2–4·0. We should thus expect an alkaline stool to yield a majority of coliform organisms, and a more acid stool to yield a majority of streptococci or staphylococci; this is precisely what happens.

TABLE I.—*A Table showing Alterations of the pH in Glucose Broth Cultures from Day to Day.*

Organism.	Initial pH.	1st day pH.	2nd day pH.	3rd day pH.	4th day pH.
Streptococcus hæmolyticus	7·0	3·8	3·8	3·8	3·8
,, *pyogenes*	7·0	3·8	3·8	3·8	3·8
,, *mitis*	7·0	3·8	3·8	3·8	3·8
Staphylococcus aureus	7·0	4·0	4·0	3·8	3·8
Bacillus coli communis	7·0	4·0	4·0	4·0	4·0
,, ,, *hæmolyticus*	7·0	4·2	4·2	4·2	4·2
,, *acidophilus*	7·0	3·7	3·6	3·6	3·6
,, ,,	7·0	3·8	3·8	3·7	3·7
,, ,,	7·0	3·8	3·8	3·8	3·8
Peptone Water.					
Bacillus coli communis	7·0	6·8	7·2	7·6	8·0

Neutrality = pH 7·0; acidity = pH less than 7·0; alkalinity = pH more than 7·0.

The *raison d'être* of the lactic acid bacilli of the normal human intestine (for they are always normally present in quantity) thus becomes apparent. We have in them a means of keeping down the coliform bacilli and streptococci to a considerable extent. In other words, the acidophilus bacilli constitute a partial protective mechanism, which in the past I believe has been insufficiently appreciated, although of recent years the therapeutic value of acidophilus therapy has not entirely escaped notice, and the name of Metchnikoff is still remembered.

Ancillary to this method of investigating the stools in a number of mental patients, we have, in this laboratory, made it a routine procedure to attempt isolation of the non-lactose fermenting coliform types by means of brilliant green enrichment, and these results are also mentioned below.

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Technique.

(1) About 1 grm. of fæces is inoculated into 10 c.c. of peptone water and plated.

Then 0·25 c.c. of 1 in 10,000 brilliant green in sterile distilled water is added to the peptone tube, which is incubated 24–48 hours and subsequently subcultured on to MacConkey's bile salt neutral red agar for non-lactose fermenting types.

(2) 1 grm. of fresh fæces is stirred into 10 c.c. of glucose broth pH 7·0, and a direct plating made on to human citrated blood-agar (10% of sterile citrated fresh human blood is used). The first plating is recorded in the appended Tables II and III as the first-day plating. Twenty-four hours later the glucose broth tube, which has been incubated, is well shaken and further sampled on to a second plate, and so on, up to the fifth day, or until a pure culture of *B. acidophilus* is obtained. These successive platings will show diminishing numbers of coliform colonies replaced by streptococci, and then finally supplanted by *B. acidophilus* in the more normal specimens. Sometimes intermediate cultures will show staphylococci or moulds.

Normal Criteria.

The subjoined table (II) gives the normal fæcal flora. The streptococci have been classified according to Holman's method (Table IV), which is based on the hæmolytic reaction and the fermentation of three sugars only, namely lactose, mannite and salicin. We used 1% solutions in litmus or Andrade peptone water. The addition of sterile serum was discarded after a time as unnecessary.

I consider *S. fæcalis* to be a normal saprophyte in man, also *B. coli*, if non-hæmolytic, and *Staphylococcus albus* and, of course, *B. acidophilus*. Further, in a normal specimen, *B. acidophilus* should make its appearance within seventy-two hours of the primary plating; otherwise it is held to be deficient in quantity.

Although only four normal specimens are tabulated below, I have used this method for some years past in the pathological department of a general hospital (Princess Alice Memorial Hospital, Eastbourne), and in almost every instance have recovered *B. acidophilus* within seventy-two hours, whatever other pathological defects may have been present. The very wide divergence from these standards shown by mental patients will therefore be appreciated on perusing the subsequent findings in this paper.

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TABLE II.

Normal examples.					Fæcal cultures, with special reference to the (aerobic) streptococcal and acidophilus flora. Successive daily platings from glucose broth.				
No. of case.	Age.	Sex.	Mental condition.	Reaction.	1st day.	2nd day.	3rd day.	4th day.	5th day.
1	33	Male	Normal	Alkaline	*B. coli* 100%	*B. coli* 90%, *Streptococcus fæcalis* 10%	Not plated	*B. acidophilus* 90%, *Staphylococcus albus* 10%	*B. acidophilus* 96%, *Staphylococcus albus* 4%
2	33	,,	Normal	Neutral	,, ,,	*B. coli* 98%, *Streptococcus fæcalis* 2%	,,	*B. acidophilus* 90%, *B. coli* 1%, *Staphylococcus albus* 9%	*B. acidophilus* 90%, *Streptococcus fæcalis* 6%. *Staphylococcus albus* 4%
3	60	Female	Normal	Alkaline	,, ,,	*B. coli* 50%, *Streptococcus fæcalis* 25%, *B. acidophilus* 25%	*B. acidophilus* 100%	Ditto	Ditto
4	39	Male	,,	,,	*B. coli* 20%, *B. acidophilus* 80%	*B. acidophilus* 100%	Ditto	,,	,,

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TABLE III.

Typical examples from patients in the East Sussex County Mental Hospital.					Fæcal cultures, with special reference to the (aerobic) streptococcal and acidophilus flora. Successive daily platings from glucose broth.				
No. of case.	Age.	Sex.	Mental condition.	Reaction.	1st day.	2nd day.	3rd day.	4th day.	5th day.
1	49	Female	Confusional Insanity	Acid	*B. coli* 100%	*B. coli*, *Streptococcus hæmolyticus* (*S. subacidus*)	*B. coli*, *Streptococcus hæmolyticus*, *B. acidophilus*	*Streptococcus hæmolyticus*, *B. acidophilus*	Tetrads, *B. acidophilus*
2	44	,,	Hallucinatory insanity	Alkaline ++	*B. coli* 50%, *B. coli hæmolyticus* 50%	*B. coli* 60%, *B. coli hæmolyticus* 20%, *Streptococcus fæcalis* 20%	*B. acidophilus* 100%	Ditto	Ditto
3	53	,,	Melancholia	Alkaline	*B. lactis ærogenes* 100%	*B. lactis ærogenes* 20%, *Streptococcus fæcalis* 80%	*Streptococcus fæcalis* 5%, *B. acidophilus* 95%	,,	,,
4	23	,,	Imbecile, with mania	,,	*B. coli* 100%	*B. pyocaneus* 100%	*Streptococcus pyogenes* 100%	*Streptococcus pyogenes* 100%	*Staphylococcus aureus* 50%, *Streptococcus pyogenes* 50%
5	41	,,	Melancholia	,,	,,	*B. coli* 100%	*B. coli* 50%, *Streptococcus fæcalis* 50%	Moulds 100%	Moulds 100%
6	25	,,	Dementia præcox	,,	*B. coli* 90%, staphylococci 5%, *Strep. hæm.* (*S. pyogenes*) 5%	*B. coli* 10% *Streptococcus hæmolyticus* (*S. pyogenes*) 90%	*Streptococcus hæmolyticus* (*S. pyogenes*) 100%	*Streptococcus pyogenes* 100%	*Streptococcus pyogenes* 100%

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TABLE III—*continued.*

Typical examples from patients in the East Sussex County Mental Hospital.					Fæcal cultures, with special reference to the (aerobic) streptococcal and acidophilus flora. Successive daily platings from glucose broth.				
No. of case.	Age.	Sex.	Mental condition.	Reaction.	1st day.	2nd day.	3rd day.	4th day.	5th day.
7	71	Female	Secondary dementia	Alkaline	*B. coli* 100%	*B. coli* 100%	*Streptococcus ignavus* 100%	*Streptococcus ignavus, Staphylococcus albus*	*Streptococcus ignavus, Staphylococcus albus*
8	38	,,	Melancholia	,,	Staphylococci, *B. coli*	Ditto	*B. coli* 90%, *Streptococcus mitis* 10%	*B. coli* 20% *Streptococcus mitis* 80%	*B. coli* 20%, *Streptococcus mitis* 80%
9	52	Male	Imbecile	,,	*B. coli*, streptococci (*S. fæcalis*)	*B. coli*, *Streptococcus fæcalis*	*B. coli*, *Streptococcus fæcalis*	*B. coli*, *Streptococcus fæcalis*	6th day. *B. acidophilus* 90%, *B. coli* 5%, *Streptococcus fæcalis* 5%
10	35	,,	Epileptic	,,	*B. coli* 100%	*B. coli* 40% *B. coli hæmolyticus* 30%, *Streptococcus mitis* 30%	*B. coli* 90% *Streptococcus mitis* 10%	*Streptococcus mitis* 95%, *Streptococcus pyogenes* 5%	7th day. *B. acidophilus*, staphylococci
11	28	,,	,,	,,	*B. paracoli*, *B. coli*, streptococci	*B. coli hæmolyticus*, *Streptococcus hæmolyticus*, *S. fæcalis*	Ditto plus *B. acidophilus*	*Streptococcus hæmolyticus* (*S. infrequens*)	5th day. *B. acidophilus* 100%
12	60	,,	Manic-depressive insanity	,,	*B. coli hæmolyticus*, *Streptococcus mitis*	*B. coli*, *B. coli hæmolyticus*	*B. coli*, *Streptococcus mitis*, *Streptococcus hæmolyticus* (*S. pyogenes*)	*Streptococcus mitis* 50%, *Streptococcus hæmolyticus* 50%	Streptococci 90%, staphylococci, *B. acidophilus*

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TABLE IV.—*Holman's Classification of Streptococci.*

Gram-positive cocci in chains, no capsules, bile insoluble. (+ = fermentation, o = no fermentation.)

			Hæmolytic.	Non-hæmolytic.
Lactose	+ Mannite	+ Salicin	+ *S. infrequens*	*S. fæcalis.*
			o *S. hæmolyticus I*	*S. non-hæmolyticus I.*
		o Salicin	+ *S. pyogenes*	*S. mitis (? S. pyogenes S. viridans, if green colonies.*
			o *S. anginosus*	*S. salivarius.*
	o Mannite	+ Salicin	+ *S. hæmolyticus II*	*S. non-hæmolyticus II.*
			o *S. hæmolyticus III*	*S. non-hæmolyticus III.*
		o Salicin	+ *S. equi*	*S. equinus.*
			o *S. subacidus*	*S. ignavus.*

The following summarizes the results of the above investigation, which has been both lengthy and laborious, involving the classifying of a multitude of streptococcal strains. The work has taken approximately eighteen months, and the examinations were carried out upon new admissions to the East Sussex Mental Hospital, generally within a week of their arrival.

Summary of Findings in Fifty-three Mental Cases.

	Percentages.
Specimens of Fæces.—Reaction:	
Alkaline	80
Neutral	10
Acid	10
Percentage showing abnormal coliform organisms	36
,, ,, ,, streptococci (*i.e.*, excluding *S. fæcalis*)	69·1
1. *B. acidophilus* obtained in *pure* culture within 72 hours	9·4
2. ,, *present* in culture within 72 hours (*i.e.*, normal content in 18·8%.)	9·4
3. ,, *delayed* over 72 hours	41·5
4. ,, *totally absent* in cultures (*i.e.*, abnormal in 81·1%.)	39·6
Percentage of abnormal aerobes:	
Coliform bacilli	20·6
Staphylococci:	
Non-hæmolytic types	38·9
Hæmolytic types	7·5
Streptococci:	
Non-hæmolytic types	43·1
(*S. fæcalis*	28·3)
*Hæmolytic types	54·3
*Moulds and tetrads	26·3

* Erroneously reported in the Board of Control Report, 1928, Part 2, the error being mine.

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Discussion.

The significance of the lactic acid intestinal flora is well established. They are the bacterial "friends of man," almost his only allies amongst a host of enemies and neutrals. Consequent upon a diminution or absence of the antiseptic action of the acidophilus bacillus, we should therefore expect intestinal toxæmic effects to be well marked. Are not these not only common, but commonplace, amongst the insane? Moreover, constipation is an accompaniment of "acidophilus deficiency," and is frequently in general practice remedied by administration of acidophilus milk. This condition is likewise the rule rather than the exception in mental hospitals. The frequent need of aperients for almost every patient bears witness to this phenomenon, which is too well known to need labouring. In the series, examples of which are tabulated above, no less than 80% of the mental patients show deficient acidophilus content. Are we not therefore justified in attributing intestinal toxæmia and constipation in the insane to this deficiency, in part at any rate? The very high percentage of abnormal streptococci (69%), the frequent appearance of staphylococci and moulds and the infrequency of the normal acidophilus content are both striking and corroborative.

The weakness of the intestinal protective mechanism is thus clearly demonstrated. This weakness obviously paves the way for all kinds of toxæmia of intestinal origin, and intestinal toxæmic effects are very prominent in the insane—for example, the relation of the epileptic fit to constipation, a relation which is almost automatic in its *modus operandi* in some instances.

At the same time, it is one thing to demonstrate a fair probability, and it is another to prove it. In connection with the weakness of the intestinal protective mechanism in the insane, is it possible to prove this in any way?

I think it is possible, or is at any rate worth trying out, in the following manner: Solis-Cohen (2) and Warren Crowe (3), (4) and (5) have evolved a technique known as "pathogen-selection," wherein the patient's blood is made to select the organisms to which it is unduly sensitive, and to which its resistance is lowered. For instance, a fæcal emulsion is made and a measured quantity inoculated into 4 to 5 c.c. of the patient's blood. The blood is incubated and subcultured and the subculture yields perhaps none, perhaps one, perhaps two to three organisms, which also appear, along with others, in the control platings.

A series of such experiments in the insane carried out with normal controls should, I believe, definitely prove or disprove

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lowered multiple germ resistance, always provided that "pathogen-selection" selects the pathogenic germ and not the hardiest sero-phyte. What pathogen selection does do, without any shadow of doubt, is to demonstrate the bactericidal power of the blood in a most striking manner, and it may help us to demonstrate a lowered bacterial resistance in the insane. Roughly speaking, we have found that 1 c.c. of blood will normally kill at least 5,000,000 organisms from a fæcal emulsion.

Therapeutic Indications.

The deficiency of *Bacillus acidophilus* can be remedied in either of two ways:

(*a*) By acidophilus milk.

(*b*) By acidophilus emulsion.

In a mental hospital, the provision of lactic milk on a large scale would require organization, but could quite well be done by collaboration of the pathologist and kitchen staff. It would be both cheaper and more effective than purchasing large amounts of acidophilus emulsion.

Lactic acid milk is being used with undoubted benefit in intestinal infection in general practice, and its use in the mental hospital admissions appears to me to be a hopeful line of treatment. Other sources of toxæmia will not, of course, be overlooked, and the more natural acidophilus therapy is infinitely preferable to frequent douching, except perhaps as a preliminary.

We hope to investigate this problem of acidophilus deficiency from both the pathogen-selection and the therapeutic aspects in the future, and the results will eventually be reported.

Meanwhile, I desire to thank Dr. F. R. P. Taylor, Medical Superintendent, for permission to publish this paper, and Dr. J. N. G. Nolan, who is in charge of our admission hospital, for his assistance.

On the technical side Mr. Wallace Reed has rendered great service in the routine examinations; the isolation and typing of these very numerous strains has been no light task.

A Note on the Preparation of Acidophilus Milk.

(*Method as used at the Princess Alice Memorial Hospital, Eastbourne.*)

Two half-pints of milk (preferably "certified," but this is not essential) are delivered in sealed bottles. The bottles of milk are unsealed and autoclaved (not forgetting the caps) for twenty minutes at 15 lb. pressure, or else are boiled for ten minutes and the milk transferred to a clean flask and boiled again for five minutes.

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Inasmuch as the milk is merely a vehicle for the lactic bacillus, boiling is immaterial, but everything must obviously be strictly sterile; otherwise the milk will grow other germs, such as *B. subtilis*, which are undesirable even if not pathogenic.

The sterile milk is transferred back to the half-pint bottles and allowed to cool. It is then inoculated with 0·05 c.c. of a 2,000 million per c.c. suspension of *B. acidophilus* in glucose broth (per ½ pint, *i.e.*, 100,000,000 organisms approximately).

The milk is incubated for four hours at 37·5° C. It is then stood in a cool place overnight. Next morning films are made (0·025 spread out evenly), defatted and stained by Gram's method. An average count of two or three organisms per field ($\frac{1}{12}$ Watson oil immersion) is about the correct strength. The milk should have a faintly acid taste. If it curdles, it is either over-incubated or contaminated.

The first half pint is drunk before the midday meal on an empty stomach, and the second before the evening meal. The second dose will be a little stronger than the first.

The period of treatment extends from three to six weeks. This is usually long enough to establish the bacillus.

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PROBLEMS OF PYRETOTHERAPY IN PARALYTIC DEMENTIA.

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Pyretotherapy, or the artificial induction of pyrexia as a means of treatment of the psychoses, has engaged the attention of psychiatrists for many years. The means employed to this end have been numerous, and they may be divided into two classes:

1. Chemical: Hypodermic injections of sodium nucleinate; or of protein in the form of peptone, blood, milk, tuberculin or emulsions of dead bacilli.

2. Infective: The introduction of living organisms, especially *Plasmodium vivax malariæ* and *Spirochæte recurrentis duttoni*.

When the rise of temperature is induced chemically, few physical signs are detected beyond leucocytosis and pyrexia, whereas, when the infective means are employed, many of the signs which constitute the syndrome of fever, for instance, heat and dryness of the skin, tachycardia, increased respiratory rate and diminution of the volume of the urine, with heightened colour, retention of chlorides and increased excretion of urates, occur.

Pyrexia is only one physical sign in the syndrome of fever.

The application of pyretotherapy to paralytic dementia is largely empirical. It is a surprising fact that whereas the literature on the subject deals exhaustively with the clinical results of treatment and the changes which are found in the brain, attempts to explain the rationale of this form of therapy are scanty. It is the object of this thesis to inquire into the rationale through consideration of—

1. The part played by the reticulo-endothelial system in the genesis and control of pyrexia.

2. The changes which are found in the hæmatopoietic tissues in paralytic dementia.

3. The effect of pyretotherapy upon the reticulo-endothelial system and its relationship to the changes found in the blood-forming tissues in paralytic dementia.

The inquiry outlined above was suggested to the writer by the systematic investigation, over a period of four years and involving a thousand histological examinations, of 67 cases of untreated

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paralytic dementia and 21 of non-paretic syphilis, in which it was found that, in the former, definite changes in the bone-marrow and blood constantly occurred, which were absent in the latter.

Finally, 500 examinations were made with regard to the changes in the blood-cells in 28 cases of paralytic dementia treated with relapsing fever, and in 4 treated by injections of foreign protein.

Summary of Recent Literature.

1. *The Pathogenesis of Paralytic Dementia.*

Many theories have been invoked to explain why some subjects of syphilis develop paralytic dementia while others do not.

Dujardin and Targowla (1) consider that the disease is the outcome of an abnormal prolongation of the anallergic period of the primary and secondary stages of syphilis, in which the tissues of the body have not yet become sensitized to the virus, while in non-paretic syphilis the tertiary stage is an allergic one of marked reaction to the antigen, in which the vascular changes, allowing greater permeability, permit the production and dissemination of antibodies. They mention, in support of this, that paretics react but little to intradermal injections of protein, while patients in the tertiary stage of syphilis react well.

With regard to malarial treatment, these authors consider that the malarial infection induces an allergic state in which a defensive reaction is set up against the malarial infection, the fate of which is shared by the syphilitic virus. If malaria indeed induces some state of resistance to the syphilitic processes at work, then we have an explanation of why the Wassermann reaction in the cerebro-spinal fluid is mitigated in intensity in the course of a year or two, or, in rare cases, intensified immediately after treatment. No reference, however, is made to the part played in the production of bodily resistance and immunity by the reticulo-endothelial system, especially by those portions which are included in the spleen and marrow. Finally they do not explain why the neural elements should be particularly vulnerable to the syphilitic virus in those patients who develop paralytic dementia.

An opposite view is propounded by Fildes and McIntosh (2), who consider that all tertiary and parasyphilitic lesions are the result of hypersensitiveness in certain tissues which produces what they describe as an allergic reaction, resulting, in the case of paralytic dementia, in death of the nerve-cells and proliferation of the neuroglia.

Collier and Adie (3) advance arguments against the theory that there are two varieties of *Spirochæte pallida*, a neurotropic and a

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dermatropic—a theory which finds little support. The same authors associate themselves with the view, widely held, that all forms of syphilitic affection of the central nervous system start as meningo-vascular disease and that the nerve elements are affected later.

Bolton (4) considers that paralytic dementia will only appear in brains the subject of some constitutional defect. In other words, the subjects of paralytic dementia would, if they had not contracted syphilis, have been liable ultimately to some other form of dementia.

2. *The Effects of Pyretotherapy.*

Sabastiani (5) found that in untreated paralytic dementia leucopenia occurred, accounted for by diminution in the number of neutrophilic leucocytes, while in non-paretic syphilis there was a neutrophilia. He considers that in paralytic dementia the spirochæte has a special action upon the reticulo-endothelial system.

The cell-changes which occur in the blood of paretics treated by induced malaria are described in detail by Paoletti (6). He discusses the *rôle* possibly played by the various types of leucocyte, but he offers no suggestion regarding the blood-forming tissues. He refers to the "shift to the left" in the Arneth count and he quotes Wolf Skalweit (7) on the same subject.

Saunders (8) mentions the "shift to the left" in untreated dementia paralytica, and states that it is corrected by malarial therapy.

Bruetsch and Bahr (9) and Freeman (10) describe the histological changes which take place in the brain after malarial treatment. They find increased perivascular infiltration by mononuclear and plasma-cells during the malarial paroxysms. They describe, after the termination of the fever, the disappearance of the perivascular infiltration, the return of the perivascular lymph-spaces to their normal condition and the reappearance of the cortical lamination. They suspect that the plasma-cells, which were so prolific in numbers during the malarial paroxysms, are withdrawn into the blood-vessels in order to reinforce the phagocytic action of the monocytes in the blood.

Hattori (11) demonstrated the presence of plasma-cells in the blood of paretics undergoing malarial treatment.

The only direct reference to the reticulo-endothelial system is made by Bruetsch and Bahr (9), who describe proliferation of this tissue, especially in the cerebral vessels, spleen and periportal spaces of the liver. They consider the question from the point of view of the resistance to the malarial infection and its secondary

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effects upon the syphilitic process, and ignore the influence of the reticulo-endothelial affection upon the pathogenesis of paralytic dementia or its relationship to the rationale of treatment.

Sträussler and Koskinas (12) consider that the diffuse inflammation of the brain and meninges, characteristic of paralytic dementia, is converted by means of malaria into a more localized gummatous type resembling cerebro-spinal syphilitic meningitis.

Before proceeding to a description of a series of cases it is advisable to consider certain aspects of the genesis and control of pyrexia and fever, for the following thesis will maintain that syphilitic involvement of the reticulo-endothelial system, resulting in the depression of some of its functions, is one of the factors which determine whether a given syphilitic subject will develop paralytic dementia. Since most causes of pyrexia, especially those which produce the most beneficial therapeutic results, stimulate this tissue, it follows that stimulation of the functions of the reticulo-endothelial system other than by the mere production of a rise of temperature constitutes part of the rationale of pyretotherapy, since the results achieved by pyretotherapy, through stimulation of the leucoblastic tissue in the bone-marrow and the reticulo-endothelial tissue in the cerebral vessels, consist in either the conversion of paralytic dementia into meningo-vascular syphilis or in simple retrogression of the characteristic pathological changes.

The Reticulo-Endothelium and Pyretogenesis.

The mechanism whereby the temperature of the body undergoes its normal variations in health and its fluctuations in disease is little understood. Many theories have been advanced, the most widely accepted being that the temperature at any given moment is the resultant of the interplay between heat-loss and heat-production, the two being ultimately regulated by the central nervous system. Consequently, one of the two factors being constant, changes in the other will be associated with alterations in temperature.

None of the theories takes into account the possibility that the reticulo-endothelial system may play an active part in the production and control of pyrexia. Yet pyrexia is almost invariably accompanied by cytological changes in the peripheral blood in the form of numerical changes in the white corpuscles.

The more usual causes of pyrexia are as follows:

(*a*) *Associated with Fever.*

Bacterial and protozoal diseases.
Septic infections.

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(*b*) *Not associated with Fever.*

High external temperature in moist medium.
Muscular exertion.
Toxic substances:
- Atropine.
- Strychnine.
- β-tetrahydronaphthylamine.

Lesions of central nervous system:
- Cerebral hæmorrhage, rarely.
- Lesions of pons.
- Lesions of spinal cord.
- General paralysis.

Affections of hæmatopoietic tissues:
- Pernicious anæmia.
- Leukæmia.
- Chloroma.
- Aplastic anæmia.
- Hodgkin's disease.
- Secondary anæmia, following repeated hæmorrhages.
- Fractures of bone.
- Neoplasm of the marrow.

In the first group it will be observed that all septic or infective diseases are associated with either an increase or diminution in number of one or more varieties of leucocyte. It follows that the hæmatopoietic tissues are stimulated by some diseases and depressed by others.

In the second group, diminished loss of heat is chiefly responsible for the effects of exposure to a high temperature. In sun-stroke the rays of the sun are considered to exert a chemical effect, and it will be remembered that leucocytosis may occur, showing that the reticulo-endothelial system takes part in the somatic reaction. During muscular exertion there is a slightly increased output of both red and white cells. It is interesting to observe that most of the diseases of the blood-forming tissues are associated with intermittent pyrexia, that they occur, for the most part, more frequently in men, and that they are subject to periodic remissions. In these three respects they resemble paralytic dementia. In simple fracture of a bone the marrow becomes involved; similarly in neoplastic disease. In fracture the condition is strictly localized, and in neoplasm it remains so for a time. As there is no evidence that any substance is produced which gives rise to pyrexia in either of these conditions, it is fair to assume that the pyrexia is associated with a localized process involving the reticulo-endothelium of the marrow. The anæmia secondary to repeated hæmorrhages is

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accompanied by pyrexial attacks and increased activity of the marrow.

The conditions which produce an abnormally low temperature are nearly all the antithesis of those which cause pyrexia, and the majority are associated with retardation of bodily metabolism, whether from deficient intake, as in starvation, or from the general exhaustion consequent upon long-standing diseases such as chronic nephritis, malignant disease or chronic pulmonary and cardiac disorders. After acute infections the temperature may remain subnormal for many weeks. At the same time the blood may show corresponding changes. Whereas during the fever neutrophilia occurred, the blood may now exhibit a post-infective eosinophilia or lymphocytosis. Fever may, on the other hand, give rise to neutropenia, as in typhoid fever or after several paroxysms of malaria. Likewise pyrexia occurs sometimes in aplastic anæmia, in which there are few signs of myeloid activity.

The close relationship which exists between the production of pyrexia and functional disturbances of the hæmatopoietic tissues suggests the possibility of a definite pyretogenic function being assignable to the reticulo-endothelial system. There is, however, no reason to suppose that the two functions of pyretogenesis and hæmatopoiesis are inseparable. Pyrexia forms only part of the somatic reaction instituted by the reticulo-endothelial system, including the spleen, in order to establish resistance and immunity to infection.

Results of the Investigations.

1. *Untreated Paralytic Dementia.*

Lymphatic tissues.—A moderate overgrowth of the fibrous element in the trabeculæ occurred which was not confined to any particular set of glands. No other points of interest were observed.

Bone-marrow.—To the naked eye the marrow in the ribs was bright red. Microscopically the whole was obviously engorged with blood. In some specimens the trabeculæ were clearly thickened through increase in the amount of reticular fibres. In the detached cells, however, a more notable variation from the normal occurred. There was a marked scarcity of neutrophilic leucocytes. Their precursors, the myelocytes, were also less in evidence than is usual. The normoblasts and red cells in the blood-channels composed the vast majority of the cells present, and they possessed no appreciable abnormalities.

It is striking that the changes found in the bone-marrow were absent in eight non-paretic syphilitic subjects, in all of whom the Wassermann reaction had been positive in the blood. In two the

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cerebro-spinal fluid gave negative results to the Wassermann and colloidal gold reactions and there was no excess of cells. In the remainder it was not examined.

The Blood.

Red cells.—In the early stages of the disease numerical and morphological changes were not conspicuous. In the advanced stages, however, the numbers fell as low as four million, the colour index being about 0·8. The size and shape of the cells showed no appreciable change.

Leucocytes.—During the first and early second stages of paralytic dementia the total and differential counts remained within normal limits, with a Schilling index of about 5%. The Schilling index, to which reference will frequently be made in the following pages, is the number of immature neutrophilic leucocytes, or meta-myelocytes, calculated as a percentage of the total number of leucocytes. A metamyelocyte is taken to be a cell the nucleus of which is indented but shows no true lobulation.

When weakness and wasting became apparent the Schilling index rose to 19 to 20%. Finally the total number of leucocytes fell to 4000. The leucopenia was almost entirely accounted for by a reduction in the number of neutrophilic cells.

During the pyrexial attacks which are characteristic of the middle and later stages, a slight absolute increase in the number of lymphocytes occurred. In some pyrexial attacks, more especially in the later stages and probably due to intercurrent infection, a slight neutrophilia was noted, bringing the total leucocyte-count from 4,000 up to 5,000 or 6,000, the differential count being thereby restored within normal limits.

2. *The Blood in Relapsing Fever.*

(*a*) *In otherwise Healthy Subjects.*

The number of red cells and the amount of hæmoglobin are slightly reduced throughout the disease (13). The febrile paroxysms are accompanied by a moderate neutrophilia which becomes well marked before the crises preceding the termination of the paroxysms (13).

(*b*) *Associated with Paralytic Dementia.*

The red cells.—The usual number were about five million in both sexes. The colour index was 0·8. The size of the corpuscles varied within a wider range than normal, but no abnormalities with regard to shape were observed. It was unusual to find a normoblast,

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and only an occasional cell was seen which showed reticulation in films stained with cresyl blue. Immature forms, therefore, were rare.

The leucocytes.—There were well-marked changes which varied in intensity according to the stage to which the paralytic dementia had advanced. The total number, in favourable cases, followed closely the course of the temperature curve, rising to 9,000 or 10,000 at the beginning of a paroxysm and reaching 13,000 at its height. During the afebrile intervals the numbers fell to 5,000. Neutrophilia was almost entirely responsible for the increased number of leucocytes. After three or four paroxysms the leucocytosis tended to become less marked, especially in the more advanced cases of paralytic dementia.

Neutrophilic leucocytes.—It has already been observed that the Schilling index was normal during the earlier stages in untreated cases. It rose, however, to 10% during the first paroxysm of relapsing fever, becoming higher during later paroxysms. In favourable cases the index seldom rose above 30%. In advanced cases, and in those which declined under treatment, the index was high from the start, and stood at 40% to 60% during the second and subsequent relapses of fever. In the afebrile intervals, in all cases, the index stood above the normal 5%. It returned to normal, in mild cases and those which improved under treatment, within six to nine months of the termination of the relapsing fever.

Myelocytes.—Neutrophilic myelocytes were found in smears taken from 16 subjects, but in no case did they exceed 2%. Their presence was independent of the level of the Schilling index.

Eosinophilic leucocytes.—It was rare to find more than 0·5% of these cells during either the paroxysms or the afebrile intervals. They reappeared, however, to the extent of 4% or 5% after the termination of the fever. No morphological changes of interest were observed.

Basophilic leucocytes.—During the whole course of the relapsing fever basophilic cells were scanty.

Monocytes.—The large hyaline leucocytes of the blood and the so-called transitional leucocytes were all classed as monocytes. At the onset of the first febrile period the numbers rose to 10%, falling to 6% during the afebrile intervals. After three or more relapses they seldom exceeded 8%. Rather more than half the number of cells contained neutrophilic granules in the cytoplasm. The nuclei varied greatly in outline, some being deeply notched, while others were merely flattened at one point. An interesting fact was brought to light when smears were stained by means of Pappenheim's method. Many of the granular monocytes exhibited

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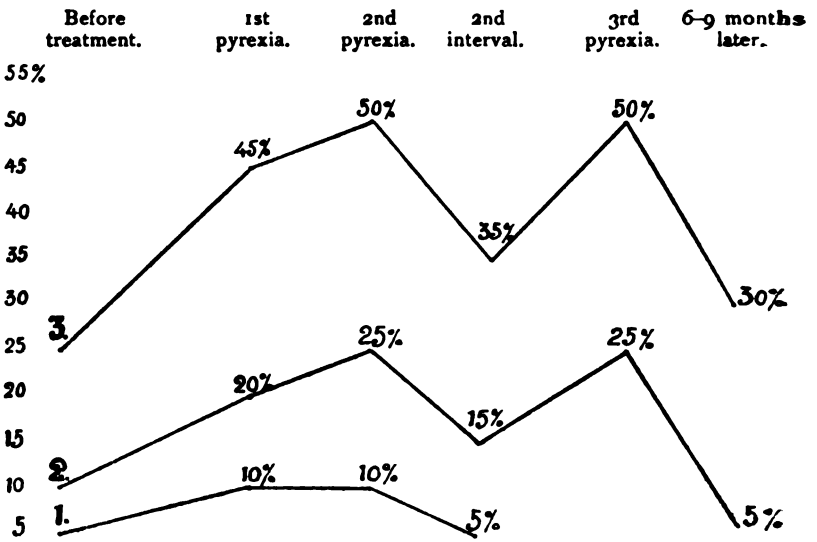
lymphoid characteristics in regard to their nuclei (14). The question at once arose of the existence of two varieties of these cells, one being of myeloid origin and the other of lymphoid (15).

Lymphocytes.—The number was relatively diminished, but it actually remained within normal limits. Large forms constituted nearly half the total number of lymphocytes, some of which were with difficulty distinguished from the smaller monocytes, especially those lymphocytes which possessed a flattened or slightly indented nucleus. The lymphocytic nuclei, however, assumed a slightly



Schilling Index in Relapsing Fever: 1. Acute mania in a non-paretic subject. 2. A case of early paresis improved by treatment. 3. An advanced case of paresis which deteriorated under treatment.

deeper shade of blue with Leishman's stain. Moreover, when stained by Pappenheim's method, the nuclear chromatin in similar cells presented the lymphoid characteristics, and they were therefore classified as lymphocytes.

Sagel (16) found somewhat similar results in his examinations of the blood, but he considered that a post-infective lymphocytosis was common. In the cases under consideration this lymphocytosis was relative only.

(*c*) *Six to Nine Months Later.*

The results varied according to the stage to which the paralytic dementia had progressed before the treatment and the degree of leucocytic reaction obtained during treatment. In mild cases, or

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those which produced a good reaction, the total leucocyte count was found to be within normal limits, with the Schilling index restored. In more severe cases, however, or those which either gave a poor leucocytic reaction or became worse during the induced fever, the total leucocyte count amounted to only 4,000 with 40% of lymphocytes, as compared with 5,500 leucocytes and 30% of lymphocytes in the same cases before treatment. The proportion of monocytes had returned within normal limits.

In no case did the induction of relapsing fever produce any change in the intensity of the Wassermann reaction in either the blood or the cerebro-spinal fluid at this stage of the investigations.

Some typical blood-counts were included in an earlier communication (23).

3. *The Blood in Malaria.*

(*a*) *In otherwise Healthy Subjects.*

In benign tertian malaria a mild leucocytosis is said to occur during the paroxysms (17), associated with a slight rise in the Schilling index. The leucocytosis is due to an increase in the number of neutrophilic cells, the subsequent withdrawal of which leads to leucopenia. During the febrile periods the monocytes are more than normally plentiful.

(*b*) *Associated with Paralytic Dementia.*

Published accounts of the blood-changes differ slightly from one another. Alberto (18) and Hattori (11) found that myelocytes occurred up to the extent of 15% in the early febrile attacks, disappearing completely after about the fifth paroxysm, by which time the blood picture approximated to the normal. They did not mention the Arneth count or Schilling index. During the earlier febrile periods plasma-cells were present in the blood (11). Saunders (8), as already mentioned, found that a " shift to the left " occurred in the Arneth count in untreated cases of paralytic dementia, which was entirely corrected six to twelve months after malarial treatment.

The Relationship between Reticulo-Endothelial Disorders and the Pathogenesis of Paralytic Dementia.

The relationship between syphilis and blood diseases is obscure, but certain facts are known. For instance, syphilis may produce a condition clinically resembling pernicious anæmia. Kyrle (20) found that syphilis caused, in some cases, a slight leucocytosis which was not influenced by treatment, and in others a more marked leucocytosis which was reduced to normal during treatment. Zanca (21) describes hypoplasia of the marrow in association with

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congenital syphilis. It is well known that the more severe syphilitic changes in the blood are confined almost entirely to the third stage. Hoff (22) stresses the importance of blood changes in syphilis, and states that the Wassermann reaction is unreliable in obviously syphilitic subjects suffering from pernicious anæmia, and that it is frequently negative.

The lesions of the central nervous system in paralytic dementia consist of—

1. Meningo-vascular lesions and
2. Neuronic degeneration.

The meningo-vascular lesions resemble those of meningo-vascular syphilis which is not a part of paralytic dementia, except that their distribution is more widespread and that they are more productive of neuroglial proliferation. There is a conflict of opinion as to whether the neuronic changes are primary or secondary, but the majority favour the latter view. It is highly probable, however, that some other pathogenic factor is at work which determines whether a given syphilitic subject will develop paralytic dementia.

The association of syphilis with disorders of the reticulo-endothelial system has already been mentioned, and evidence has been produced to show that the hæmatopoietic functions, especially those of the bone-marrow, are depressed in paralytic dementia in proportion to the stage to which the disease has progressed, as shown by the diminution in the leucocyte reserve in the bone-marrow and the output of immature neutrophilic cells when leucopoiesis is stimulated. This may also account for the readiness with which paretic patients develop bed-sores.

The Rationale of Pyretotherapy.

It has been recorded above that the leucopoietic function of the reticulo-endothelial system is depressed, and that syphilis, apart from paralytic dementia, may produce a condition which bears a close clinical resemblance to pernicious anæmia. In paralytic dementia the interference with the leucopoietic function, which has its analogy in the pathogenesis of pernicious anæmia, suggests that the former may be due to syphilitic affection of the reticulo-endothelial system—a process which is obviously combined with meningo-vascular syphilis. Further, remissions are a characteristic of the clinical progress of both diseases, and both occur more frequently in men. It appears that the spectre of a damaged reticulo-endothelium looms up constantly in the pathogenesis of paralytic dementia. It follows, therefore, that the line of attack in treatment should be directed towards stimulating the defensive

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reactions of this tissue, and the greatest success in this direction has been won by the induction of infective fevers, especially that of malaria.

It is a matter of common knowledge that, in some way, induced fever stirs up resistance to the luetic infection, shown by clinical improvement and by reduction in the intensity, after twelve months, of the Wassermann reaction in the cerebro-spinal fluid. The cytological changes in the blood during treatment form another indication of this reaction. Yet the records will be searched in vain for any expression of the view that depression of the reticulo-endothelium is a factor in the pathogenesis of paralytic dementia, or that the benefits of pyretotherapy are conferred through rectification of this fault. Attention has, so far, been fixed either upon the effects of the raised temperature itself, or upon the possibility that the somatic reaction to the therapeutic agent may be, in an indefinite way, coincidentally lethal to the syphilitic virus. The intensification of the Wassermann reaction which is said to occur in rare cases during malarial treatment has hitherto been a pathological enigma. It should be regarded as a sign that the tissue concerned with the production of resistance and immunity, namely, the reticulo-endothelial system, is showing increased activity, since the Wassermann reaction may be looked upon as a phenomenon of resistance to infection.

Therapeutic Problems.

(*a*) *Choice of Fever.*

Published work shows that malaria has undoubtedly afforded the most satisfactory results from a clinical point of view. Now malaria exerts a transient stimulatory effect upon the leucopoietic functions, which is followed by an inhibitory action shown by the subsequent leucopenia. At the same time active phagocytosis is stimulated in the brain, and plasma-cells appear in the peripheral blood. These cells were not observed in the blood of patients treated with relapsing fever, and their absence denotes a less intense action upon the reticulo-endothelial system on the part of the therapeutic agent. It must be admitted, however, that no opportunity was found to investigate the brains of patients treated with relapsing fever, because no member of the series died before the investigations were closed.

(*b*) *Choice of Patient.*

Of the cases treated with relapsing fever, it was found that some continued to decline under treatment, or even to show acceleration

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of their progress. In these there was a poor leucocytic response, with a high Schilling index. Others, on the contrary, showed improvement. Their leucocytic reaction was good and the Schilling index was restored to normal limits. It would seem reasonable, therefore, when the application of malarial therapy is contemplated, to test the power of leucogenic response by some mild means, such as the injection of sodium nucleinate or peptone, before resorting to the more drastic malarial treatment, rejecting those who give a poor response, and accepting only those in whom the reticulo-endothelium is in a good condition to respond without the risk of over-stimulation of an already exhausted tissue. We thus have at our disposal a method of estimating, to some extent, the probable effect of pyretotherapy in any given case. In practice this would mean that pyretotherapy would be available, not only for early and mild cases and a few of the more advanced, but also in a way which will be referred to later.

(*c*) *After-Treatment.*

It is the usual custom in this country and on the Continent to keep the patients under observation as long as possible after a course of malarial treatment, and even to give a second course if this is indicated. In view of the obvious importance of the hæmato-poietic functions, any measure known to stimulate them should be applied to the patient who has undergone malarial treatment—for instance, residence for a time at a high altitude, which is known to produce an erythropoiesis. It is possible that stimulation of one function of the reticulo-endothelium, namely, erythropoiesis, might result in increased activity of such a closely allied function as leucopoiesis, since both types of cell are derived from the bone-marrow, the only difference being that the former is intravascular in origin while the latter is extravascular.

Since malarial therapy can convert a case of paralytic dementia into one of meningo-vascular syphilis, it follows that a subsequent course of arsenicals is indicated.

(*d*) *Prophylaxis.*

There are, in the experience of every psychiatrist, cases of paralytic dementia who have a clear history of having been diagnosed as syphilitic only after their blood had been found to be positive to the Wassermann reaction in the course of investigation on account of some other illness, and in whom there have been few, if any, manifest syphilitic lesions. This class is one in which the administration of the usual anti-syphilitic remedies is notoriously

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unsatisfactory. In view of the findings described in this thesis it may be concluded that malaria should, in these cases, be tried as a prophylactic measure, followed by the usual anti-syphilitic treatment.

Summary.

In the series of cases under consideration it was found that changes occurred in the bone-marrow and blood in paralytic dementia, which showed that the leucopoietic functions were impaired and that the leucocyte reserve was diminished. In untreated cases there was a definite leucopenia.

When leucocytosis was stimulated the intensity of the neutrophilic reaction varied inversely with the stage to which the paralytic dementia had advanced.

Under the same conditions the Schilling index rose in direct proportion to the stage of the disease. The rise was most marked in those cases whose decline was accelerated by pyretotherapy, and least marked in those who were benefited.

Six to nine months after treatment by the induction of relapsing fever the Schilling index, in favourable cases, was restored to normal limits after having been at a higher level before treatment. This is in accord with the experience of other writers with regard to the effects of malarial treatment.

The better the condition of the patient after treatment, the nearer did the differential leucocyte count and Schilling index approach the normal, and the converse was equally true.

The changes described above are referable to affection of the reticulo-endothelial system. An analogy has been drawn between paralytic dementia and pernicious anæmia. That syphilis may attack this system is evident from the fact that it may produce a condition clinically resembling pernicious anæmia. Yet this need not always be the case, for the writer detected no appreciable rise in the Schilling index when neutrophilia was artificially induced in syphilitic subjects in whom paralytic dementia was not evident, nor were any signs of impairment of the leucopoietic function detected at autopsy.

It would appear, therefore, that involvement of the reticulo-endothelium by the syphilitic virus constitutes one of the factors which determine whether a given syphilitic subject will develop paralytic dementia. Strength is lent to this hypothesis when it is remembered that the type of subject who develops paralytic dementia is one in whom a scanty history of earlier syphilitic lesions indicates absence of reaction against the infecting organism.

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Since involvement of the reticulo-endothelial system is a characteristic of paralytic dementia, it follows that therapeutic measures should take this into account.

In general, pyrexia is associated with a leucocytic reaction resulting in numerical changes in the leucocyte-content of the blood—that is to say, the reticulo-endothelial system takes part in the genesis and control of pyrexia.

Treatment by means of leucogenic infections resulted at first in emphasizing the changes which paralytic dementia produces in the leucopoietic functions. The later effects consisted in the correction of these changes in the cases which derived benefit from the treatment, and in the reverse in those which were unimproved. In other words, pyretotherapy stimulates the resistive function of the reticulo-endothelial system at a time when this function is flagging under the influence of a chronic infection, namely, syphilis.

From the pathological point of view, some writers have found that malaria can convert paralytic dementia into a condition of meningo-vascular syphilis which may even assume a diffuse gummatous nature. Others describe increased reaction on the part of the reticulo-endothelium of the cerebral blood-vessels during the malarial attack, with subsequent restoration of the cortex. It is significant that a therapeutic measure which relieves the depression of the leucopoietic function should either stimulate the cerebral reticulo-endothelium and then restore it nearly to normal, with consequent clinical improvement, or else convert a paretic condition into one of meningo-vascular syphilis.

From the therapeutic point of view the following considerations arise:

1. Malarial therapy should be reserved for those cases in which a satisfactory leucocytic reaction has been obtained by means of a preliminary test with a mild leucogenic agent.

2. In view of the importance of the reticulo-endothelial disturbance, patients who have derived benefit from malarial treatment should reside for a time at a high altitude in order to stimulate erythropoiesis, in the hope that the closely allied function of leucopoiesis will benefit.

3. Prophylactic malarial treatment should be advised for all patients who are known to suffer from syphilis in whom few, if any, secondary or tertiary lesions have been observed.

Acknowledgments and thanks are due to Drs. D. Ogilvy and A. A. W. Petrie, Medical Superintendents of Long Grove and Banstead Mental Hospitals respectively, and to Dr. F. L. Golla and the Staff of the Pathological Department of the Maudsley Hospital for facilities and assistance afforded.

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INTENSIVE ANTISYPHILITIC TREATMENT FOLLOWING INDUCED MALARIA IN NINETEEN CASES OF GENERAL PARALYSIS.

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For the past three years at Claybury every case of general paralysis treated by malaria has received a course of injections of arsenic (sulfarsenol) concurrently with the routine course of quinine. During twelve months of this period the majority of cases were given, in addition, (*a*) a course of iodide and mercury by mouth, and (*b*) a course of intravenous injections of tryparsamide.

Tryparsamide alone has in the hands of many given results comparable to those obtained by malaria.

(1) Lorenz *et alii*, for example, reported 37 (41%) of paretics restored mentally, and 38 (42%) improved. Failure in many of these cases had previously followed the use of other arsenical preparations.

(2) Dawson treated 20 paretics at the Maudsley Hospital and obtained definite clinical improvement in 13.

(3) Neymann and Singleton, giving an average of 28 doses to each patient, treated 18 cases of general paralysis. Of these 5 made a social recovery, 4 were strikingly improved but still remained in hospital, and 9 were unimproved. In 12 cases of tabo-paresis the figures were, respectively, 4, 2 and 6, and in 14 cases of meningo-vascular neuro-syphilis, 3, 4 and 7.

In the L.C.C. mental hospitals favourable results obtained from arsenicals following malaria, and reported upon in 1926 (4), may be recalled here. Of 87 patients treated with malaria, but with no arsenic, 35·6% were discharged and 32·20% had died. Of 36 patients treated with malaria and arsenic 41·7% were discharged and 5·5% had died.

It remained to be seen what advantage, if any, could be gained by pushing the supplementary treatment to an intensive degree.

The figures I am about to quote have been obtained from four groups of cases, designated here I, I (*a*), II and III.

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The details of treatment in each group are as follows:

(A) In Groups I, I(*a*) and III:

The routine course of malaria was followed by 6 hypodermic injections of sulfarsenol on alternate days (3 of 18 cgrm. followed by 3 of 24 cgrm.).

(B) In Group II only:

As in (A) with the addition of—

(1) Orally, potassium iodide gr. xv with liq. hydrarg. perchlor. 3j, thrice daily. This was given from the day of the last injection of sulfarsenol to that of the last injection of tryparsamide.

(2) Intravenously, 8 injections of tryparsamide (2 grm.), given weekly, starting 4 weeks after the last dose of sulfarsenol.

Strains of malaria parasite.—In all groups except I(*a*) the old Claybury strain, transmitted by blood inoculations since 1923, was used. In I(*a*) a new strain, introduced a year previously by mosquito inoculation, was employed. An element of fallacy might be introduced by a diminution in potency in the old strain; comparison, however, of the results obtained in Groups I and III indicates the contrary.

TABLE I.—*Table of Results in Four Groups.*

Group.	Periods.	Number of patients.	Discharged.	Improved, still under care.	No change.	Worse.	Died.
I	29.6.26–29.7.27	14	42·85%	..	14·28%	..	42·8%
I(*a*)	29.6.26–29.7.27	11	45.46%	18·18%	9·09%	9·09%	18·18%
II	29.7.27–29.7.28	19	31·56%	15·78%	31·56%	10·52%	10·52%
III	29.7.28–1.7.29	11	45·5%	..	45·5%	..	9%

TABLE II.—*Table showing Average Duration of Symptoms in Months Before Treatment, in Four Groups and their Constituent Sub-groups.*

	Total average in each group.	Average in sub-group of "successes."*	Average in sub-group "discharged."
Group I . . .	12·8	10·6	10·6
Group I(*a*) . .	8·1	8	7
Group II. . .	6·9	3·7	2·8
Group III . .	13·7	21·15	22·5

* *i.e.*, "discharged," "improved, still under care."

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A possible element of fallacy also is introduced by what appears from the first table to be the greater potency of the new strain, the "successes" in Group I(*a*) being 19·4% greater and the "failures" only 1·18% less than the average in Groups I and III. This, however, might be accounted for by the shorter duration of symptoms before treatment in Group I(*a*).

An obvious criticism, of course, is that the results in Group III are hardly comparable owing to the time-factor.

Summary and Comparison of Results.

The percentage of "successes" in Group II is 3% less than the average in the remaining groups. The percentage of discharged in Group II is 1% greater than the average in the remaining three groups.

The percentage of failures (*i.e.*, "worse," "died") in Group II is 5% less than the average in the remaining three groups.

Assuming that cases with a short history react most favourably to any treatment, one would expect, on comparing the ratios 3·7 : 6·9 (Group II) in Table II with the corresponding ratios 10·6 : 12·8, 8 : 8·1, 21·1 : 13·7, in the other groups, that notably better results would be obtained in the intensively treated group.

Conclusion.

The balance of evidence shown in this paper is neither for nor against the use of intensive antispecific therapy (potassium iodide, mercury and tryparsamide) compared with a short course of sulfarsenol as the supplementary routine procedure.

The number of cases, however, is small, and it would be a presumption to condemn the treatment before observing the results in a larger series.

Possibly better figures might be obtained if the therapy were more protracted, or delayed until the lapse of a longer post-malarial period, and it is proposed to treat a number of patients along these lines for the purpose of comparison.

I have to thank Dr. G. F. Barham, the Medical Superintendent, for permitting the publication of these figures.

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THE SEDIMENTATION TEST AND ICTERUS INDEX: A FEW OBSERVATIONS ON THEIR USES IN A MENTAL HOSPITAL.

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By the erythrocyte sedimentation phenomenon is meant the rate at which the red blood-corpuscles settle in an anti-coagulative column of blood. Numerous modifications of the method are in use, differing only in the way results are recorded and in minor details of technique.

Fahraeus (1), in 1918, revived the observation, first made by John Hunter, that when citrated blood is allowed to stand, the erythrocytes settle with different velocities in different physiological and pathological conditions, the speed varying with the severity of the disease present. These obvious variations in the sedimentation rate seem to indicate that definite conclusions might be drawn from this observation. One is impressed with the frequent references to the test in European journals, though the phenomenon is one which has attracted comparatively little attention in this country. The test is much less generally used here than abroad, and only recently has it been studied in psychiatry.

It is not my intention to discuss the various theories offered to explain the sedimentation phenomenon. Many discordant opinions are offered from time to time, but the basic cause for accelerated sedimentation still remains obscure. Fahraeus and Huber regard it as due to a change in the electric charge of the red cells. Sachs claims it is due to a variation in the stability of the colloids of the plasma, while Balachowsky (2) believes the mechanism of the reaction involves the existence of a previously undescribed factor called "hæmotonia." Hunt (3) believes that variations of the fibrin content of the blood or of the cell volume exert a marked influence on the sedimentation rate. Disregarding theory, the fact remains that the speed of the reaction is in more or less direct proportion to the amount of toxicity and cell destruction present in the body. The test has been extensively used in almost all

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branches of medicine and surgery, and has been proved to be of clinical and practical value.

In general there are two principal methods for doing the sedimentation test. The first is the Westergren (4) or distance method, the distance in millimetres being noted through which the red blood-cells settle in a given time. The second is the Linzenmeier (5) or time method, which I have employed throughout my investigations. In this method the underlying principle is to note the time it takes for the red blood-cells to settle through a given space. The tubes are 3 to 4 mm. in diameter and 6·5 cm. high, with a mark indicating the level of 1 c.c. of the fluid. This mark is indicated by the figure 0, and below this marks are made at 6, 12 and 18 respectively. 5% sodium citrate is used, 0·2 c.c. being drawn up into a syringe; the vein is then entered and blood drawn up to the 1 c.c. mark. The citrated blood is mixed by drawing in a bubble of air and inverting the syringe several times. The citrated blood is then placed in the tube to reach the 0 mark. The tube is watched for the upper level of the red cells to fall to the 6, 12 and 18 mm. mark. In a normal individual it takes between 250 and 300 minutes for the red cells to sediment to the 18 mm. line. In the above methods it is necessary to do venepunctures, and at the same time the routine blood Wassermann test may be done; a reading is also made on the same sample at the end of twenty-four hours to get the corpuscle volume, and the supernatant serum is then used to determine the amount of bilirubin in the blood. Thus we get the following information:

1. Sedimentation of erythrocytes.
2. Corpuscle volume.
3. Icterus index or bilirubin content of the blood.

It is not always an easy matter to detect pathological conditions in the insane, one reason for this being that very often a satisfactory physical examination is impossible owing to the patient's lack of co-operation. For example, acutely maniacal patients are too excited and too restless, while in cases of melancholia the patients may be too unsettled and agitated to cooperate. Other patients are so absorbed in their hallucinations and delusions that they fail to complain of their physical ailments. Further, in cases where there is marked mental deterioration, the patients may become incapable of reporting their subjective symptoms.

I applied the test to over 300 patients. Of that number 200 were purely mental cases; the remainder included patients suffering from various disorders—tuberculosis, rheumatism, jaundice, neuro-syphilis, affections of the thyroid gland and various inflammatory conditions. The test was also done on 58 cases of

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general paralysis of the insane, a study of the sedimentation rate being made before, during and after treatment. The following observations were made:

1. No appreciable change was noted in the neuroses, paranoia or manic-depressive insanity, nor in 85% of patients suffering from epilepsy, unless complicated by physical disease. In the remaining 15% of epileptics the sedimentation time was retarded.

2. Increased sedimentation rates were found in all cases of general paresis, neuro-syphilis, psychoses with cerebral and general arteriosclerosis, senile dementia and in the acute types of alcoholic insanity with delirium. A marked increase was noted in bulbar paralysis and hemiplegia. The rate of sedimentation appeared to vary directly with the amount of mental deterioration and the presence or absence of organic deterioration and toxicity. The speed was not increased in Parkinsonianism.

In general paresis untreated cases gave increased readings. In cases giving a doubtful Meinicke and Wassermann reaction less acceleration was noted; in cases with Meinicke ++ or +++ and Wassermann ++ or +++ acceleration was noted in proportion to the physical and mental deterioration present, being more markedly increased when the paresis was complicated with luetic involvement of other parts of the body or by the presence of other destructive or toxic conditions. During treatment with malaria the rate was further increased at the onset of the fever, but was appreciably reduced in 95% of cases at the end of the course. Afterwards the rate depended on the physical and mental condition of the patient. In cases showing improvement the rate gradually approached normal; in others running a rapid downhill course the speed of the reaction was increased. At the end of a course of treatment by tryparsamide the rate was found to be less rapid than before treatment in 90% of cases. Cases treated successfully with both malaria and tryparsamide gave nearly normal findings.

In these diseases the test may be an aid to prognosis, because with the improvement in the condition of the patient the sedimentation is retarded.

3. In dementia præcox the readings in the simple and paranoid types are normal or approximately so. In the katatonic type the reaction is only slightly accelerated, but where there is marked mental deterioration the readings are more rapid. No case of dementia præcox gave a marked increase unless complicated by a physical disorder.

4. In inflammatory conditions a sedimentation time under 30 minutes was found to mean active infection; from 30 minutes

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up to one hour, latent infection. A sedimentation time of over 2 hours excludes the possibility of either active or latent infection. The temperature does not in any way affect the sedimentation time.

5. Variations of the sedimentation rate were found in diseases of the thyroid. The number of my cases in which observations were made is too small to draw conclusions. There was no apparent correlation between the sedimentation rate and the severity of the disease. It was elevated in exophthalmic goitre, but this may possibly be explained by the anæmia present. It is apparently valueless in determining the type or degree of hyperthyroidism.

6. Tuberculosis: In T.B. + cases (with tubercle bacilli in the sputum), with a sedimentation rate up to 20%, about 67% attain arrest or improvement. In T.B. + cases with a sedimentation rate of more than 20% about 65% remain T.B. +. They may remain stationary or become worse. In T.B. — cases, 85% with a sedimentation rate up to 30% were found to attain arrest or improvement.

To some extent a decrease in the hæmoglobin content of the blood was found to correspond with an increased sedimentation-rate. Sometimes, however, high hæmoglobin values were found with high sedimentation rates and low hæmoglobin values with low sedimentation rates. The decrease in the hæmoglobin is usually accompanied by a diminished number of erythrocytes, and this diminution possibly accounts for the increased sedimentation rate. Gram (6) found that increased sedimentation of the erythrocytes in anæmia closely corresponds with the decrease in the blood count.

The icterus index.—At the end of 24 hours after the reading has been taken the supernatant plasma is pipetted and compared in a Sahli tube up to the 10 mark with a standard solution of 1 : 10,000 potassium bichromate. The number of times that the plasma must be diluted to correspond in colour with the standard is taken as the icterus index. The normal range is from 4 to 6. It has been found that clinical jaundice is always present when the index is above 15 and invariably absent when it is below. The zone of latent jaundice lies therefore between 6 and 16. The icterus index is therefore useful—(1) as an indicator of latent jaundice in such conditions as pneumonia and toxæmias. 2. For the detection of passive congestion of the liver due to myocardial failure in disease of the heart, arterio-sclerosis and emphysema. 3. In involvement of the liver and biliary passages in the presence of cancer.

The icterus index is therefore of great practical value. It gives information as to the amount of biliary dysfunction. It can be

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done easily and readily. It is also of value in the differentiation of the primary from the secondary anæmias, normal values being usual in non-hæmolytic anæmias.

In 88% of cases of general paresis following treatment with malaria it was a remarkable fact that the supernatant serum was pure white in colour. It has been stated that the icterus index should always be used in connection with anti-luetic therapy.

Comments.

The sedimentation test is a sensitive indicator of biochemical changes in the entire organism. It is not a specific test for any one disease, but is found in all conditions in which there is accompanying tissue destruction. It may be compared with the leucocyte count in that it varies within normal limits and is increased in many pathological conditions, but at the same time there are many diseases in which the readings remain unchanged. As in a leucocytosis, an increased sedimentation reaction always indicates morbidity, but does not localize it. It does not act as a substitute for physical examination. On the contrary, it stimulates further physical and laboratory examinations.

The test is of practical aid in detecting many pathological conditions, especially in dealing with insane and uncooperative patients. It is helpful in determining the diagnosis and progress of both mental and physical diseases, though its use in psychiatric diagnosis is limited. It does not give marked deviations from the normal in functional disturbances of the nervous system, but is modified in the majority of diseases of the central nervous system. Abnormally rapid sedimentation is associated with organic disease, and may be taken to exclude a purely functional disorder such as neurasthenia. It is also useful in the case of a neurotic and complaining patient who may have developed some pathological condition.

In the field of tuberculosis it has found a wide clinical application. It is a reliable indicator of the amount of pulmonary activity present. It is not specific for tuberculosis, but a parallelism is found between the severity of the disease and the increase of the sedimentation speed. Further, it is a guide to the presence of latent toxæmia from a septic focus.

Conclusions.

The technique of the test is simple; it is helpful in determining the progress of mental and physical diseases in addition to the diagnosis and differential diagnosis of many pathological conditions,

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especially in dealing with the insane, and so is of sufficient practical and clinical value to deserve further attention in mental hospitals.

I am indebted to Dr. R. M. Clark, Medical Superintendent, for permission to publish these results, and to Mr. A. H. Fann, Chief Laboratory Assistant, for his valuable help.

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THE MENTAL ASPECT OF GYNÆCOLOGICAL PRACTICE, AND SOME NOTES ON THE PELVIS AS A FOCUS OF SEPSIS.

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THE appointment, believed to be the first of its kind in this country, of a whole-time gynæcologist to a mental hospital,* marks a big step forward in the care of the mentally afflicted.

Any hospital that includes large numbers of women among its patients must have the need for both specialized diagnosis and treatment of the diseases peculiar to women.

We have all observed how psychic function is correlated to physical health, and how dyspepsia, constipation, vitamin or fresh-air starvation are reflected in outlook on life. A tendency to depression, irritability, diffidence and fatigue accompanies the onset of menstruation, and many responsible for the care of growing girls point this out to them and endeavour to inculcate the necessity for more "æquanimitas" than usual at these times.

Those practising among women are familiar with the distressing state of mind found in an idealistic and potentially maternal young girl whose love affair has gone wrong, in the bride left a widow or deserted; and in lesser degree in the older woman, who, longing for children and a home, realizes that even if she marries now her chances of maternity are remote.

Individual cases stand out in my mind where either pelvic disease, sterility, the thwarted or abnormally active reproductive instinct or involuntary incomplete consummation of marriage (as apart from coitus interruptus) have been accompanied or followed by a degree of mental unbalance.

CASE I.—Single, æt. 27 (holding responsible position); intense vaginitis (*B. coli*), urethritis, and cervicitis. Seen five days after first "risk," she needed in addition to persistent local treatment with diathermy and ionization much care in handling to prevent a complete nervous wreck. Ultimately cured.

* Horton Mental Hospital, Epsom.—ED.

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CASE 2.—Æt. 26, very cultured and travelled. Extreme mental and physical depression; lack of mental balance, and occasional hysterical attacks going on into "trance." Complete absence of veracity; had been living with various men, unknown to her family. Asthenia, pyorrhœa, xanthorrhœa (urethral and cervical infection). Began to improve, then removed herself from the treatment by a London woman specialist in electrotherapy and insisted on a male doctor; spent much of her parents' money for months on costly general investigation and treatment in London. (Complement-fixation test positive for Neisser's.) All this time she decried her previous treatment, until the pathologist (under whose care she had placed herself), beginning to suspect a re-infection, ultimately tackled her with this gap in her history. Confession of guilt, but ultimate result of treatment not known.

CASE 3.—Single, æt. 24; severe staphylococcal endometritis, salpingitis, and pelvic peritonitis, after acute *Staphylococcus albus* cervicitis following repeated trunk boils, styes and an abscess. Bilateral salpingectomy (inevitable owing to peritonitis), etc., was followed by extreme moodiness and depression because of future sterility and question of marriage. Ultimate fair convalescence of health (after treatment of chronic pelvic inflammatory thickening and xanthorrhœa, etc.) and improved outlook, but will need constant help, sympathetic understanding, rallying and the holding out of the prospect of future usefulness in work. During convalescence she had six septic teeth removed at one sitting without my being advised, and as so often happens, a very brisk pelvic flare-up followed, particularly in the urethra and bladder. As in the "rheumatic," so in these cases, any dental sepsis must be eradicated, but only by very gently progressive stages.

CASE 4.—Married, æt. 34, sought advice for leucorrhœa and intense dyspareunia and sterility. Examination showed remains of vaginal scars and two distinct cervical canals. Menstrual periods every second week (one heavy, one scanty). History of never being "well" since operation just before marriage for removal of double vagina, which was discovered during examination because of intense dysmenorrhœa. After operation she was "ill" (? sepsis), and leucorrhœa, absent before, now developed, and later a second operation had to be performed. Ionization of the canals began to relieve the leucorrhœa and some pain, but the patient, first dwelling on her dyspareunia and childlessness, began to have delusions; later became very violent with marked suicidal tendency. Subsequent amenorrhœa. She was certified and removed to a mental institution. Her delusions were mainly of children she thought she had conceived and the contents of her delirium referred to her sterility. After about one year she made a complete recovery.

CASE 5.—Single, æt. 30; xanthorrhœa; scar in Scarpa's triangle thought by her doctor to be specific. Recent entanglement with married man (a heavy drinker) who had suffered from mental breakdown. During one of his drunken outbursts the girl received such extensive perinæal trauma that it was followed by abscesses locally and also in Scarpa's triangle. Wassermann reaction negative all through. She became a complete wreck, obtaining drugs and advice simultaneously from many practitioners, to each of whom she told a specious tale of woe. A chance meeting of the patient and her panel doctor at my door began my enlightenment, and when my suspicions were confirmed, she made the most damaging statements about the doctors who had treated her before. She had been so cunning in keeping from each of them the fact that she was under anyone else, that while I suspected drug-taking it was some time before this was clear. Ultimately after many months of careful treatment by her doctor and by the vicar into whose hands fortunately she finally fell, together with prolonged pelvic treatment from me, she was restored (after several relapses) to mental and physical health. She is now working steadily.

Of the cases quoted, Case 4 became certified, Case 5 seemed likely to be. Case 2 could not be kept at home, she was so difficult and unstable and had to be kept travelling or in nursing homes. Case 1 was only kept at work by moral support while treating the very obstinate pelvic infection with electro-therapy,

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vaccines, etc. Case 3 needed much patient moral help, as well as pelvic diathermy, etc.

All of us know cases of incomplete consummation of marriage in young couples, in which the young wife comes to the doctor in great distress that she is "not properly made," and wondering if she ought not to let her husband "get a divorce" as she is "not a proper wife," etc. After suitable advice, consummation takes place and maybe conception. The contrast between the nervous, weeping, bitterly unhappy girl of the first visits and that of the happy wife and radiant mother with infant is well known; but failing adequate medical help and sympathy how easily a different outcome!

In mental hospitals many parallel cases might be found if only the chain of events in each case could be followed. The research would often be arduous, for the chain is ill linked. It would only appeal to those whose interest in gynæcology lies in "woman as a whole," not merely in her pelvis.

Sepsis, of dental and other origin, as a possible causal factor in mental as in other ill-health is now definitely established. Experience in a hospital devoted to the study and treatment of rheumatic disease shows that although exhaustive searches have been systematically made into every part of the body (either in hospital or private practice), yet the female pelvis has often been overlooked. Examination may show it to be unhealthy or even grossly diseased, and subsequent treatment often not only relieves the local condition, but markedly improves the general health and frequently also the rheumatic complaint for which the patient is admitted.

The following cases, occurring in the practice of the Royal Bath Hospital, may be of interest as illustrative of disease in which a septic genito-urinary focus was found and treated with success.

The first three cases had received prolonged, systematic treatment but did not improve until the pelvis was treated.

Nurse G—, æt. 47, ex-Army sister; generalized fibrositis and polyarthritis. Had had considerable treatment, electrical and otherwise, in a London hospital with no relief, and had been compelled to give up work. History of vaginal discharge in spite of hysterectomy for fibroids some years ago. "Whites" as a young girl. *Examination:* Cervix (left at operation) exuding much clear mucus; large amounts of pus came from the urethra (Friedländer's bacillus). *Treatment:* Intra-pelvic (medical) diathermy and ionization and high-frequency massage, and general Spa treatment. Her joints began to improve and discharge to diminish. Owing to shortage of beds she could not stay long, but when she returned later for further treatment she had improved considerably and the urethra was clear.

1929: Writes, "Been working three years as a staff nurse in hospital"; is "very well." She affirms that she made no improvement until the pelvis was treated.

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Miss H—; "Rheumatoid arthritis" seven years, many joints; only walked with difficulty. History of prolonged treatment (of all kinds, including electrical and yatren casein), but with no relief; reported much leucorrhœa. *Examination:* Gross excess of clear mucus from the external os. The bacterial examination here was sterile. *Treatment:* two months' general Spa treatment and intra-pelvic diathermy. Improved remarkably, and in April, after about seven weeks, was able to do a country scramble, up and down a rocky hill-side. October: reports, "very well."

Mrs. J—, æt. 50; "Infective polyarthritis." Readmitted here several times but improved only to a certain point. Ultimately complained of a vaginal discharge (which she had noted but not reported before) since pan-hysterectomy, 1922. *Examination:* Purulent discharge from a dimple in the vaginal vault scar (*not* a true sinus). Skeenitis. *Treatment:* General Spa + sulphur-water vaginal douches; cauterization of Skeene's. Slight improvement. Sent home on a vaccine made from her pelvic pus and stock arthritic streptococci. She made such marked improvement at home that caution was relaxed regarding increase of strength and the dosage was "pushed." An acute reaction of all joints followed, the eyes, hitherto unaffected, swelled up and she could not see owing to the intense pain. She returned as bad as ever.

Treatment: $AgNO_3$ to scar dimple and Skeene's; later, as healing was delayed, U.V.R. to both; sulphur-water vaginal douches and sitz-baths and a little pelvic diathermy. She regained ground lost. November, 1929, "better than she has been for years. Very active, and hands, previously deformed, look very nearly normal."

In the next two cases direct treatment of the pelvic focus without any other treatment relieved the rheumatic condition.

Mrs. C—; Polyarthritis, feet, knees, hands, wrists; can hardly walk or dress herself. History: Leucorrhœa at 15, ? Bartholin's abscess. Acute rheumatism at 17. A year and a half ago, acute rheumatism; in bed for weeks with pain, fever and discharge. *Examination:* Skeenitis, endocervicitis, copious green and yellow pus. Left utero-sacral ligament thick and hard. Uterus enlarged and fixed to left. *Staphylococcus albus* and Neisser's cocci grown from cervix and urethra. *Treatment: Only* pelvic diathermy to vagina, cervix and urethra. Her joints steadily improved, and after about four weeks she could run from bedroom corridor to messroom down many steep stairs. Hands normal except for subluxatoon of metacarpo-phalangeal joint; cultures sterile; pelvis normal and remained quite well until Easter, 1928, when she had acute Bartholinitis, xanthorrhœa, and involvement of all joints (? re-infection, though husband had been passed as non-infected). Re-admitted; had diathermy treatments and this time Spa treatment also. Improved remarkably excepting for elbow-joint and metacarpo-phalangeal joint. She made further progress at home and reported the elbow normal, but later we heard that she was as bad as ever again, presumably re-infected.

Mrs. W—; Polyarthritis and fibrositis and chronic debility. Xanthorrhœa, left-sided pain. Bartholin's abscess at fourteen and after parturition; leucorrhœa since adolescence; labour five and three-quarter years ago, A.P. and P.P.H., then red lochia six weeks; xanthorrhœa excessive ever since. Third labour, P.P.H. (after discharge all through pregnancy). Rheumatism came on as soon as up; acute onset, first in knees and ankles, then wrists, shoulders and knees; could not walk for six months. Had had vaccine with no relief (? source). Feels and looks ill, very pale; wrists and finger-joints involved, feet flat and walking painful. *Examination:* Skeenitis; bulky cervix (drawn to left), with marked erosion and purulent discharge; internal os very patent. *Treatment:* Pelvic diathermy (medical), intra-urethral and to uterus and adnexa (vagino-abdomino-lumbar route). This patient responded unusually quickly. After the fourth treatment she not only did a big day's washing but then went for an hour's walk; finally came home and cleaned her rooms from sheer joy of feeling better. Stopped treatments after eleventh one because of children's illness; no discharge, joints remarkably improved. 1929, spring, reported: "Well, in spite of nursing three sick children all the winter and having influenza herself."

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The treatment is usually as follows: First a series of glycerin irrigations of the uterus (as laid down by Remington Hobbs), then the pelvic diathermy treatment of Cumberbatch and Robinson, with vaginal bi-polar faradism, monopolar high frequency, and special levator ani and other exercises as indicated, together with colonic and vaginal lavage with sulphur waters. "Monsol" or "Iodex" pessaries are used when the discharge is very objectionable. Further general Spa treatment according to the needs of the case is directed by the physician concerned.

Findings such as these make one suspect that the unhealthy pelvis may be an even more common factor in predisposing to or provoking general or mental ill-health than is yet realized.

Only those who have watched the weary, toxic housewife or the crippled rheumatic, unfitted for her duties, gradually increase in health and vigour under treatment, can fully appreciate the semi-invalidism or worse, and the wastage-rate of women's health and effort, for which chronic pelvis sepsis is responsible.

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ON MEMORY.

By W. Burridge, D.M., B.Ch.Oxon.,
Professor of Physiology in the University of Lucknow.

In previous communications I have shown that the excitation processes mediating mind are essentially due to an interaction between Ca salts and colloids; also that behind a response or thought of a particular size there can lie an infinite series of excitation processes differing in the proportions of the two interacting factors. This composition next determines the type, or quality, of thought.

These principles applied to memory showed that a memory trace was a persisting changed state of colloidal aggregation wrought in a nerve-cell through receipt of a stimulus, and that recall of the experience was somehow or other due to subsequent interaction of those changed colloids and Ca salts.

On those principles the fundamental equation expressing a recalled memory would be—

$$H + L = T,$$

where L is a state of colloidal aggregation, or memory trace, H is calcium, or the remembrancer, and T the response of the conscious organ. The factor L also determines feeling tone, and H the intellectual appreciation of the nature of L (1).

The equation shows that, of the same event, an infinite series of memories is possible, "*tot homines quot memoriæ*" in fact, and though it does not show precisely what is perfect memory, it does indicate two classes of imperfect memories, namely those in which L is too great, and those in which L is too small.

For as L increases in size, the feeling tone of the memory increases, and this added tone, considered in ordinary life to bias the individual's judgment of a past event, according to our equation automatically diminishes the capacity to apply to the memory trace enough of the factor H to give good judgment. The limit is reached when the factor L becomes equal to, or even greater than T. There is then left no scope at all for H, and with this the experience cannot be recalled to mind. It becomes instead what I have termed an expelled memory, but what Freud terms incorrectly a repressed memory (2).

At the other extreme the factor L is so small as to leave the remembrancer, H, too little data to work on.

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The equation thus gives two classes of imperfect memories:

1. Those of great emotional experience or content.
2. Those of too small emotional content.

Freud, it should be noted, assumes for the two classes a common mechanism for loss, *viz.*, repression. His mechanism we find wrong.

Now the statement that "Time is the great Healer" represents, I take it, a truth of common experience. I accept its truth, and deduce from it that, in the excitation processes mediating memories, time produces an altered balance. Time heals by reducing the feeling tone of a past experience which, in our equation, implies a reduction in the magnitude of the factor L, balanced, of course, by a corresponding increase in the magnitude of H. Such an alteration in the balance of its excitation processes provides a more "reasonable" view of that experience, and enables it to be seen in a "different light."

This nature of the healing influence of time, however, is precisely the same as that previously suggested to underlie senescence (1). The healing influence is thus part and parcel of senescence. But a decrease of L balanced by a corresponding increase of H implies retention of cerebral vigour, and though this change of balance carried too far eventually leaves the judge too few data for judging, it yet seems probable that in the last stages the judge himself should also weaken.

This changed composition of excitation processes with the passage of time also alters the capacity of the cells to receive new impressions. An environmental change of a given strength, I find from observation on the heart, produces less change when excitation processes are of the composition here considered senile than when these are juvenile. Accordingly, I deduce that as age advances the production of memory traces will become increasingly difficult. This is, of course, well known. The point to be made about it is its vindication of the reliability of our premises.

Now, so far as I know, there is no evidence that what may be termed the ordinary stimuli of everyday life are increasing in strength. The struggle for existence may possibly be intensified, but the grass is just as green as it used to be, the birds sing just the same songs and so on. If, however, our environment is to produce the same effect on us in old age as in youth, its power would require to increase *pari passu* with our decreased capacity to receive an impression, which, of course, does not happen. What does happen is that, as age advances, less and less of the environment makes impression, until finally the stage is reached of self-centred senility only desirous to live.

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If, then, we place an old and a young man in the same environment, the memory traces left by its changes will in each case be greater in the young than the old; also the smaller changes registered in the young will fail to obtain registration in the old. In accord with this, as a man ages, there comes a time when the younger people around him begin to appreciate the fact that father can recall much less of the events of the previous day or week than his children can. Such a failure of memory as is here indicated, however, does not imply a failure of the machinery of recollection, but rather that the machinery obtains nothing to work on. Indeed, if the old gentleman live a sufficiently quiet life, he would presumably get out of his environment nothing to remember. He can only obtain adequate memory traces through outstanding events, such as the death of a near relative, an accident and so on. These outstanding events, however, can be expected on our hypothesis to affect the aged much less deeply than the young, though it can be urged against this that the young can be expected to survive an experience which would kill the aged. The objection, however, would mix up the amount of change produced with the amount of change required to kill. The amount of change produced in the aged may be small, but yet enough to kill, whereas the larger change produced in the young is not lethal.

Digressing at this point from memory to perception, hearing, sight, etc., it is to be pointed out that all these attributes are mediated by the same mechanism. Accordingly an environment which fails to produce enough data for the remembrancer to work on can also be expected to produce too little for the perceivers to work with. Hence mistakes of perception can be expected to accompany this failing memory.

Reverting again to memory, we now observe that, in a system altering with age as nerve-cells have been assumed to alter, ageing implies two changes:

1. The gradual diminution in size of memory traces already present.

2. The reception of memory traces of diminished size from stimuli of constant strength.

Obviously, in that system, the memory traces of the last received ordinary impressions, because of their very smallness, will be the first to have their size reduced below that level which gives the remembrancer adequate data to work on. That is to say, the last received ordinary memories of life will be the first to be lost as age progresses. This loss of ordinary memories can be expected to be regularly retrogressive, until finally the only memory traces of ordinary events possessing adequate size for the remembrancer's activity

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will be those of childhood. Next in this scheme, childhood memories are not normally vague because of the small size of their memory traces, but because of their size being so large as to leave too little room for the remembrancer to work adequately. In old age, however, the reduction in size of these memory traces gives a correspondingly greater scope for the remembrancer's activity, and thereby gives judgment and clarity to memories previously dim. Senility may, indeed, be also an efficient psycho-analyst, and bring back to mind forgotten, or expelled, emotional experiences.

We have, however, considered so far only those memory changes which follow on diminution in size of memory traces, such changes being on the whole natural. We conceived the possibility of a general alteration in the composition of cerebral excitation processes taking place in a particular direction, and found that it implied loss at one end of the scale of memory and gain at the other. It is also possible to conceive that changes in the composition of excitation processes should occur opposite to those already described—namely that L should increase and H diminish. In this case an exceptional memory for minor recent events could be anticipated, but a poor judgment of the significance of major events due to too little scope for H. Hypermnesia has been described in fevers and after certain drugs, but I have not found mentioned that hypermnesic recollection of minor events was accompanied by faulty judging of past major events. Our equation, however, shows that such faulty judging should be there, so I suggest that, up to the present, the hypermnesia of minor recent events has so astonished observers that faulty judgment of important past events has not been looked for.*

It should be noted, too, that alcohol ought to assist recollection of minor events and give faulty judgment of major ones. At the same time the difficulty would be to find the proper dose, namely the one which would only alter the balance of excitation processes without decreasing their total efficiency. Some of the poets seem to have found what for them was a proper dose.

Any general emotional upset also, by altering the balance of excitation processes, would make important to the sufferer's mind the minor events of life, and leave him incapable of accurately judging the significance of major ones. A general upset of sufficient intensity should indeed leave the individual bereft of memory.

* Coleridge—*Biographia Literaria*, vol. i, p. 117—relates the case of a girl in a "nervous fever" who spoke Latin, Greek and Hebrew. Ecclesiastics considered her "possessed" by a learned devil, but the physicians traced the cause to past experiences. This hypermnesia during a "nervous fever" was evidently also accompanied by faulty judging of more important events.

[Such an association—hypermnesia with faulty judgment—is common enough in maniacal patients.—EDS.]

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Finally we observe that if the intensity of cerebral excitation processes undergoes a general decrease memory must suffer. The loss of memory which may follow concussion probably depends on such a general reduction. The amount lost, however, would depend on the individual's previous existence. A general reduction of size might well wipe out ten years from the recollections of the individual who has led a quiet, uneventful existence, and leave abundance for the man who has led a hectic life.

References.—(1) Burridge, W., *Journ. Ment. Sci.*, July, 1929, p. 383.—(2) *Idem*, *ibid*, p. 400.

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ON PAIN.

By W. Burridge, D.M., B.Ch.Oxon.,
Professor of Physiology in the University of Lucknow.

Application of the previously given formula for mental excitation processes (1), *viz.*,

$$H + L = T,$$

to the problem of pain indicates that L, the thing felt, is judged through H, and the two together produce the response T.

I assume that cutaneous pain is a special sensation with naked nerve-endings as its "receptors."

When "L" is small, no amount of "H" applied to L can make it definite, just as no amount of attention can enable us to discern things clearly when the light is too dim. Attention, or extra H, only enables us to discern better what is there, but can never make clear that which is below the necessary strength of illumination. Vague and indefinite sensations of uneasiness I take to be mediated by minimal sensations of pain.

In the next and definite stage the sufferer can apply enough H to enough L and, taking an example from the aching tooth, he can tell exactly where the pain comes from and describe its nature. H, however, may be derived from two sources, a part from the nerve-cells mediating the subconscious sensation, and a part derived from other sources sufficing to make the subconscious pain conscious. We are here, in fact, considering the stage where the toothache is brought to consciousness only when the sufferer directs his attention to the tooth. The toothache is then one of many competitors for the field of consciousness and can only hold that field with the help of attention. But when bed-time comes these other competitors cease their activities and leave the aching tooth the only occupant of the conscious field.

As L increases further in intensity, the aching tooth will hold the conscious field against competitors in virtue of its own inherent strength. The sufferer cannot then get away from the fact that he has an aching tooth.

With L increasing still further there must come a time where there is no room left for an adequate amount of H to give good

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judgment of the pain's nature and localization. The sufferer now has greater, but less describable, pain which cannot be definitely localized. And, because the source of pain cannot be definitely localized, it seems to spread over the mandible, face, down the arm, etc.

This spread, however, is currently believed to be due to irritation of neighbouring nerve-trunks—a view I consider unsound, because it implies that the insulation of nerve impulse along any one nerve breaks down when those impulses are strong. My equation, on the contrary, indicates that this spread is psychic, and due to one element in an excitation process being so great as to leave insufficient scope for adequate functioning of the other which mediates judgment.

In the final stage L becomes so great as to leave no room at all for enough H to mediate consciousness of L. The sufferer then attains the blissful stage of shock.

Reference.—Burridge, W., *Journ. Ment. Sci.*, July, 1929, p. 384.

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ON SEEING.

By W. Burridge, D.M., B.Ch.Oxon.,
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In the present communication it is intended to consider the fundamental formula of mental excitation processes,

$$H + L = T,$$

in terms of seeing. The equation implies that the characters of a light stimulus L are judged through a second factor H. T is the response of the responding organ (1, 3).

We consider first the known fact that we cannot see clearly insufficiently illuminated objects, and deduce from this that the judge, H, must have sufficient data, or L, to obtain a clear and distinct mental picture of the thing looked at. We thus group together, as mediated by too little L, vague shadowy outlines, dim memories (4), the music of the too-far-away band, and vague sensations of discomfort or subliminal pain (5). Vagueness, then, implies generally too little L.

In the next stage L increases sufficiently to give adequate data for the judge H, and we subdivide the stage into the conscious and subconscious, the latter merging into the former as more H is added by attention. But we cannot predicate any dividing line between one stage and another. Indeed it is a matter of common experience that extra attention, or more H, can make clear what might otherwise be obscure, so that the amount of H probably makes the difference between seeing and observing.* Clear conscious vision, then, implies the application centrally of adequate H to adequate L, received from the periphery.

If L, or the illumination, go on increasing, a stage will be reached where L has grown so large as to leave no room for adequate H. Clear conscious vision of the object whence light comes then ceases to be possible. We obtain consciousness of plenty of light, but lack the power to judge accurately its source. This stage may be called the glare stage.

Finally, L can be so large as to leave no room at all for H. This stage is one of blindness, and it should be noted that our analysis shows two kinds of blindness. In the one the light-receiving

* L should, however, be increased by the time of extra attention.

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apparatus sends either inadequate or no data to the visual centre; in the other, the eye sends to the brain impulses of a quality which prevent the application to them of the factor mediating consciousness.

The reader has probably noted that this consideration of seeing makes clear conscious vision a central phenomenon, whereas, as is well known, it certainly depends also on retinal structure. There is, however, no conflict here, because our result implies that normally only impulses arising from the fovea centralis contain that adequate L to which can be applied centrally the adequate H for clear psychic vision. The impulses from other parts of the retina must either contain too much L to permit of adequate application of H, or else so little L that no amount of H can give a correct judgment from the inadequate data supplied. Light stimuli of a given intensity must thus produce different amounts, or types, of change in the periphery and centre of the retina respectively, and so our next problem is to determine, if possible, the nature of these differences.

The solution of this problem is given, I think, by the dark-adapted or scotopic eye, which, as is well known, gives more distinct vision at the periphery than at the centre. If, then, stimuli of subnormal intensity give at the periphery impulses with adequate L, it follows that normal stimuli will give at the periphery impulses with too much L to apply to them the adequate H for clear conscious vision.

The conclusion reached here that stimuli of a given strength produce different amounts of effect at the periphery and centre of the retina respectively is only partly in accord with current physiological conceptions, in that it does not require, as these do, any difference in the relative amounts of change produced in the two retinal areas by light of different strength. For current explanations of the difference between photopic and scotopic vision would make the periphery more sensitive to dim lights and the centre the more sensitive to the strong. If these explanations were correct there should be some illumination between dim and strong light at which all parts of the eye see things equally well, but though mankind in general, and philosophers in particular, have for thousands of years occasionally watched, or observed, day fade into night and the night pass to day, none has yet recorded that while light was waxing or waning a point was reached where all things in the field of vision seemed equally clear. Such a striking phenomenon would certainly have been noted by somebody at some time or other, and never having heard of it, I conclude it does not exist. At the same time, it should be noted, no other hypotheses than those above called current were possible so long as excitation processes were considered to differ one from the other solely in point of size. My

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work shows they possess differences of composition as well as of size, and those differences of composition make all the difference to our interpretations of the facts.(2)

The next inference is that these differing responses to stimuli of equal strength at the peripheral and central parts respectively must be due to differences in the normal balance between ions and colloids in these tissues, the colloids of the peripheral parts possessing a finer state of subdividision when at rest than do the colloids of the central tissues, which, however, in balance, possess more Ca.(2)

If we conceive next the possibility that the light-sensitive elements of the retina could become regularly more and more calcified, such calcification, as work on the heart shows, would be accompanied by a corresponding reduction in the fineness of the state of colloidal aggregation and an increasing resistance to environmental change, which would culminate eventually in stimuli of ordinary intensity failing to excite.(2)

In any system of elements thus gradually becoming less responsive to environmental change, the first to lose that responsiveness entirely will be those which were least responsive at the start and, in the eye, the least responsive normally is the fovea. Hence, if the light-perceiving elements of the retina could become gradually more and more calcified, a stage would eventually be reached where the centre parts of the eye would fail to respond to light or be blind. A drug well known to give central blindness is nicotine, and turning to work which I have done to find out what this drug does to the heart when used in such amounts as smokers or tobacco-chewers get into their systems, we find that nicotine produces two effects, *viz.*, (1) it calcifies the tissues, (2) it renders the tissues much less responsive to environmental change (1). In smoking we do not take enough nicotine to reduce the output of our neural centres, but just that amount which will make them less responsive to environmental change. The smoking author, for example, is thereby enabled to carry on the work in hand without undue distraction by life's little worries (1). The sufferer from tobacco amblyopia, however, has increased too much the resistance of his fovea to environmental change, or light, but should yet possess around the central scotoma an area of clear vision, which should be better than that normally existing there, though I do not know of any observation showing this is so.

The blindness of tobacco amblyopia is thus due to a general loss of responsiveness of the retina to light, the part normally least responsive being the first to cease responding. An entirely different type of blindness would ensue if the retina were generally sensitized to light.

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In the latter case moderate sensitization would cause light stimuli of normal intensity to produce as much effect as strong light produces in a normal eye, so that, just as a normal eye is photophobic to strong light, this abnormal eye will be photophobic to normal light, though when we speak of photophobia we imply the reaction of an abnormal eye to normal light.

Photophobia, then, implies sensitization of the retinal elements to light, and if that sensitization go far enough we shall reach a stage where ordinary light is blinding. If, however, all parts of the retina obtain equal increments of sensitization, then the part of the eye which is normally most sensitive to light will be the first to go blind. The periphery, being more sensitive than the centre, would thus be the first to go blind.

But we have used the terms "centre" and "periphery" above as though they were sharply demarcated parts of the retina, whereas we only know one extreme of each. We cannot say precisely where the centre and the periphery are in contact. Accordingly, while we deduce that some part of the periphery, the most sensitive, will go "blind" first, we cannot say definitely from our analysis where that most sensitive part is. If, however, we assume there is a gradual increase of retinal sensitiveness from its centre to its peripheral border, then the blindness we are considering would be shown as a contraction of the field of vision. Since this blindness can be caused by too great an emotional tone in the nerve impulses, we should expect to find it in the hysterical, which we do.

A contraction of the field of vision, due to the causes here considered, should culminate in complete blindness, but the blindness would not be due to loss of retinal capacity to react to light. There would be, instead, such an alteration in the quality of the nerve impulses as would not permit of their being brought to consciousness. Subconscious impulses should remain intact.

Pressure, as is well known, can also excite the elements of the retina, so that with a gradual increase of intra-ocular pressure, as in glaucoma, we could expect also such a gradual contraction of the visual field as occurs.

References.—(1) Burridge, W., *Arch. Internat. de Pharm. et de Thérap.*, 1926, xxxii, p. 216.—(2) *Idem, Quart. Journ. Exper. Physiol.*, 1928, xviii, p. 315.—(3) *Idem, Journ. Ment. Sci.*, July, 1929, lxxv, p. 371.—(4) *Idem, ibid.*, January, 1930, p. 96.—(5) *Idem, ibid.*, January, 1930, p. 101.

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Clinical Notes and Cases.

The Incidence of Syphilis in Admissions to Mental Hospitals.
By E. G. T. Poynder, M.R.C.S., L.R.C.P., D.P.M., Assistant Medical Officer, Long Grove Mental Hospital, Epsom.

In many mental hospitals the blood in every case admitted is examined by the Wassermann test. Since 1913 the results on groups of cases have become available (1), (2), (3), (4). In this paper it is proposed to record the results obtained, with special points of interest, from the Wassermann test in 946 male admissions to Long Grove Mental Hospital during a period of five years from June, 1924.

The number of cases justifies comparison with those of earlier years of other investigators. The findings may have some significance in relation to post-war control and treatment of venereal disease.

The comparisons are unique in that all cases are London County Mental Hospital admissions and the Wassermann tests were all made at the Central Pathological Laboratory, the same technique, that of Candler and Mann (1), being used throughout.

The Wassermann Reaction in 946 Male Admissions to Long Grove Mental Hospital.

The cases were practically consecutive admissions. Of the 946 sera tested, 125 gave a positive result.

In all positively reacting cases, the cerebro-spinal fluid was later submitted to the usual laboratory tests: Wassermann reaction, cell content, protein and Lange reactions, and the diagnosis of general paralysis made in accordance with clinical and pathological findings.

Of the 125 cases in which the serum proved to be positive to the Wassermann reaction, 87 were diagnosed as general paralytics, two cases being of the congenital type.

Thus during the five years under consideration the incidence of general paralysis in male admissions was 9·2%, and that of congenital general paralysis was 0·2%.

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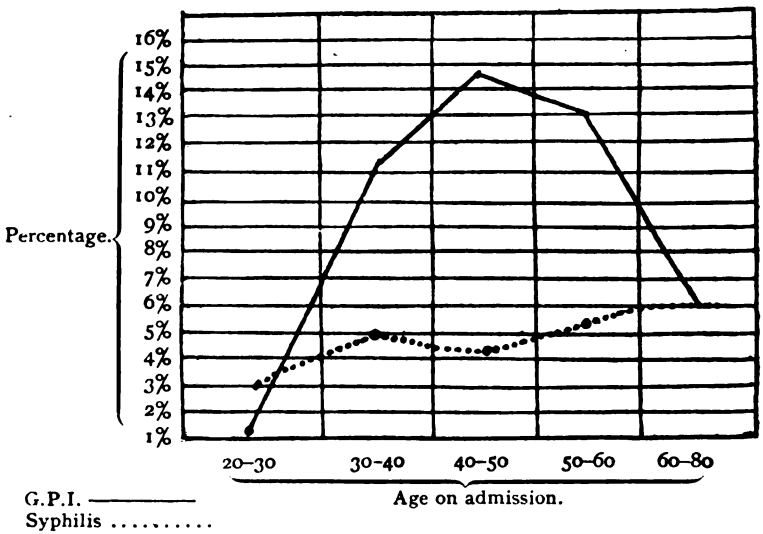
In the remaining 38 positively reacting cases, the cerebro-spinal fluid gave negative laboratory findings, except in a few cases in which the clinical and laboratory diagnosis was cerebral syphilis.

Ignoring general paralysis, the proportion of admissions who had contracted syphilis, as indicated by a positive Wassermann reaction, was 4·4%.

It is an interesting fact, and possibly not without significance as regards the Public Health control and treatment of venereal disease, that there were two cases of general paralysis in which the cerebro-spinal fluid findings were positive and the serum negative,



while another case gave only a slight reaction with the serum. Also, in one case of cerebral syphilis the cerebro-spinal fluid was positive, with a Lange reaction luetic in type, while the blood-serum was negative. Lilly and Hopkins report similar instances, and, probably as the result of more extensively applied treatment, cases giving such reactions will increase in number. This indicates the importance of the close correlation of clinical and laboratory findings for accurate diagnosis. Routine Wassermann tests on the serum of all admissions have been of the greatest value in clearing up the diagnosis in obscure cases and also in carrying out treatment.

The cases presented also show the following points of interest :

Age on admission.—In the accompanying graph the general paralytic cases and the non-paralytic cases are presented separately, showing their ages on admission in percentages of the total cases.

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The general paralytic curve shows the usual maximum incidence in middle age, while the non-paralytic cases with a positive reaction give a fairly even incidence for all ages.

There is a slight preponderance in the 30–40 period and also from 50 years onwards.

Generally speaking, apart from general paralysis, it does not appear that syphilis is more than a minor factor in the causation of the psychoses.

A comparison of the published results of the incidence of positive Wassermann reactions in consecutive male admissions to the London County Mental Hospitals shows some points of interest, and the various authors' findings covering a period from 1913 to date are given below:

J. C. Wootton, 1913, *Cane Hill.*

89, or 31% of the total 284 cases examined gave + Wassermann serum reactions.

66, or 23% of the total 284 cases (74% of the positive cases) were general paralytics.

23, or 12·5% of the non-paralytic population gave + reactions.

McCowan, 1921, *Cane Hill.*

44, or 29·3% of the total 150 cases examined gave + Wassermann serum reactions.

32, or 21% of the total 150 cases (73% of the positive cases) were general paralytics.

12, or 10% of the non-paralytic population gave + reactions.

Lilly and Hopkins, 1923–25, *Hanwell.*

105, or 25·48% of the total 412 cases examined gave + Wassermann serum reactions.

50, or 12·1% of the total 412 cases (48% of the positive cases) were general paralytics.

55, or 15% of the non-paralytic population gave + reactions.

Poynder, 1924–29, *Long Grove.*

125, or 13·2% of the total 946 cases examined gave + Wassermann serum reactions.

87, or 9% of the total 946 cases examined (70% of the positive cases) were general paralytics.

38, or 4·4% of the non-paralytic population gave + reactions.

Investigation of the above figures indicates that there has been a progressive fall in the incidence of + Wassermann serum reactions during the years 1913–1929; there is also a marked fall in the incidence of general paralysis among the admissions examined, but among cases giving + Wassermann serum reactions the incidence of general paralysis remains about the same.

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The figures regarding the incidence of syphilis among the non-paralytic patients indicate a diminution, with the exception of the Hanwell cases, in which the percentage is higher than that given for the pre-war male adult non-insane population, *viz.*, 10%, by Candler and Mann (1), and others.

This may find explanation in Mott's suggestion (5) that syphilis is more prevalent in the West End than in other part of London. Hanwell, owing to its proximity, may admit a larger quota of cases from the West End parishes; in other respects the Hanwell figures, however, indicate the falling incidence of general paralysis in mental hospital admissions. The source of the admissions to the various London County Mental Hospitals, and other factors, may influence the findings noted in this paper, and an extensive statistical survey may be necessary to confirm the general indications. The decreased incidence of syphilis and general paralysis noted in the later figures seems to be beyond fallacy, and to be associated with the post-war control and treatment of venereal disease.

In conclusion, I would express my thanks to Dr. Ogilvy, the Medical Superintendent of Long Grove Mental Hospital, for his permission to publish these findings, and to Dr. Golla and the staff of the Central Pathological Laboratory for the Wassermann reports and for their helpful interest.

(1) Candler, J. P., and Mann, S. A., *Arch. Neurol.*, 1914, vi, p. 59. *Report of the Royal Commission on Venereal Disease; Appendix.*—(2) Wootton, J. C., *Journ. Ment. Sci.*, 1914, lx, p. 579.—(3) McCowan, P. K., *ibid.*, 1925, lxxi, p. 192.—(4) Hopkins, E. L., and Lilly, G. A., *ibid.*, 1927, lxxiii, p. 108.—(5) Mott, F. W., *Report of London County Mental Hospitals*, 1912.

The Prophylaxis of Scabies. By G. L. BRUNTON, M.D., Medical Superintendent, City Mental Hospital, Nottingham.

FROM an odd remark I gathered that the problem of eradicating scabies in an institution may be causing anxiety to those in charge, and it seemed to me that it might be helpful if I gave an account of how the disease has apparently been stamped out in this hospital.

When I took over in 1921 I found, scattered throughout the wards of the female division, a form of skin irritation which was assumed to be due to the poor war dietary. However, the demonstration of the acarus cleared up the confusion, and steps were taken to prosecute vigorous treatment.

Strict inspection at the weekly bath, isolation of all skin conditions, treatment of the disease by the sulphur, Dutch balsam and

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other methods and frequent spring cleaning of the division with disinfectant washes were all scrupulously practised. The method of stoving by sulphur fumes in a closed chamber was replaced by a costly modern steam disinfector, so that all bedding, etc., could be properly dealt with.

In spite of these measures cases continued to crop up from time to time, perhaps only one case, perhaps half-a-dozen—enough to show that, although the infected case could be easily dealt with, the parasite still lurked in one or more of the eleven wards of the division.

After struggling along these lines for over four years, the instruction was given to rub sulphur ointment into the main skin folds of all patients each week after their bath. To my satisfaction, and the evident relief of the nursing staff, the reporting of fresh cases ceased.

The application of ointment after bathing was continued weekly, then fortnightly, and now in a perfunctory fashion monthly, as few of our present nurses know the condition, and the rest have little appreciation of the anxiety it caused in years gone by.

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Medico-Legal Notes.

REX *v.* WILLIAM WATSON CARR.

This case was tried at Melbourne, Victoria, on November 20, 1928, before Mr. Justice Macfarlan.

The accused, a motor mechanic, aged 24 years, was charged with the murder of Margherita Williams, on September 25, by cutting her throat. The two had known each other in England, before they went to Australia, and had been engaged, but the engagement had been broken off. They lived in the house of the woman's married brother at Wonthaggi. Carr appeared to be normal on the morning of the crime. About noon on that day Mrs. Williams found the murdered woman on the floor, with her throat cut in two places. Carr had been seen by a neighbour to run from the house. He was arrested at Nyora, a seaside place about forty miles away. Detective Jones asked him if he had cut the woman's throat. Carr's reply was, " Yes, I sharpened the knife on an emery-wheel in the garage." Asked for an explanation, he said, " I loved my Mag," and he made the same reply to other questions.

The facts do not appear to have been disputed, and the defence was insanity.

Carr gave evidence. He stated that he had come to Australia in July, 1928. When he arrived at Melbourne the woman was waiting for him. He saw her every day that he was in Melbourne. He accepted an invitation from her brother to stay at Wonthaggi. He did not remember seeing the woman at Wonthaggi. He did not remember having killed her. He would not have harmed her. Her relations had been kind to him in England. He never had a knife, and did not know that he had told the detective about the knife. He found that his finger was badly cut, and someone gave him a rag to tie it up. He did not remember how he got to Nyora. He seemed to see the woman in the water, and tried to get to her, but the waves stopped him. The last event before the crime that he remembered was working in a garage. He did not think that the engagement was ever broken off. He did not think that he was, or ever had been insane.

Dr. C. G. Godfrey, Government medical officer, declined to offer a definite opinion regarding the condition of Carr's mind at the time of the crime. Assuming what Carr had said to be true, his lost memory might be attributable to an intense emotional shock, and he might subsequently, subconsciously or unconsciously, repress the memory of every incident associated with the crime, or with the woman. The witness had not detected the slightest attempt on the part of

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Carr to feign insanity. Assuming that Carr was lying, there was nothing in the case to suggest insanity.

The judge, in summing up, laid down the usual criteria for criminal "irresponsibility," and stated that Dr. Godfrey's evidence suggested no reason for supposing that Carr did not know what he was doing at the time of the act. In reply to a question from the jury, the learned judge said that even if the crime was committed on the spur of the moment, and was not premeditated, it would still amount to murder.

The jury found the accused "Guilty," and he was sentenced to death. The sentence has, however, been commuted to one of imprisonment for life.

Dr. Godfrey's evidence is of interest, as being another instance of the acceptance of the view that a strong desire "not to know" may produce an actual condition of "not knowing."

Rex *v.* Annie Stewart.

This case was tried at Liverpool Assizes, on April 15, 1929, before Mr. Justice Shearman.

The accused is a married woman, æt. 31. She was charged with the murder of her two sons, Norman and Gordon, æt. 7 and 5 respectively, by cutting their throats with a razor on March 13. A man named Senar was indicted with her on the charge of wilful murder. He had, originally, been committed for trial on a charge of having "counselled, procured and commanded" the accused woman to murder her children. At the Assize trial no reference was made in the indictment to this latter charge. During the trial the learned judge expressed the opinion that there was not sufficient evidence to convict Senar of wilful murder, and he was discharged. He appears to have been in the habit of meeting the woman, and he had been to her house in the absence of her husband.

Evidence was given that, on the day of the crime, the accused woman had borrowed a razor from a neighbour, alleging that her husband had broken his. Later the neighbours heard screams coming from the Stewarts' house, and Mrs. Stewart ran out in a state of wild agitation, and said that she had killed her sons. The husband stated that he had been married for ten years, and their married life had been "pretty good." He denied that he had ever struck his wife. She had fits of depression, and the death of her mother had preyed upon her mind. He did not know that his wife had attempted suicide when a girl of 16 years. Two days previous to the crime he and his wife had visited a cinema, and witnessed a film in which a woman was depicted as having lost her senses, and in which there was a representation of a blood-stained knife. (This is the second recent case in which an alarming film has been suggested as a possible influence in producing a murder.) Police-Sergeant Moore stated that after the murder the accused had said to him, "Oh, my poor children. I did love

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them so. I wanted to kill myself, but could not when I saw the blood. Don't let my husband see them."

A further statement made by the accused was read. It stated that she had been unhappy in her married life, and added, "He used to knock me about when mother was alive. I felt so unhappy this morning that I thought of doing myself in. I called Norman into the parlour, and first killed one, and then I killed the other. I called Gordon. He ran out and cried, and then I called him back again, and he came in. I then cut his throat. When I saw the blood I could not kill myself. I made three attempts to kill the children, but I could not do it. I do not remember doing it. I cut their throats with a razor." (Undue stress must not be laid upon the obvious inconsistencies in this statement, which was made, in any event, by a woman in a highly emotional condition.)

The defence was that of insanity. Dr. H. G. Cole, of Liverpool, stated that he had been called to attend the accused when she had attempted suicide in girlhood. Prof. J. W. McFall, Liverpool University, said he thought the intention of the woman was to commit suicide, but she "saw red," and cut the throats of her children. Dr. Robert Walmsley, of Liverpool, said the woman was suffering from depressive insanity, and would not know that she was killing her children.

On the other hand, Dr. J. M. Ahern, Medical Officer of Liverpool Prison, said that he was unable to find any sign of mental disease in the accused. Dr. W. R. K. Watson, Medical Officer of Brixton Prison, said that both from the legal and the medical point the accused knew what she was doing at the time of the crime. Both these latter witnesses have had long and extensive experience in cases such as this; and Dr. Ahern had doubtless had the opportunity of observing the woman during the time that she was awaiting trial.

The jury accepted the theory advanced by the defence, and returned a verdict of "Guilty, but insane." The usual order for detention was made.

In a criminal trial the jury is sworn to return a true verdict "according to the evidence." In cases which involve the consideration of "irresponsibility," the question turns upon the accused's knowledge of the "nature and quality" of the act charged, and of its "wrongness." Evidence upon these points can never amount to more than the expression of the opinion of the particular witness. When opposite opinions are expressed, as in this present case, the jury is entitled to select either alternative. It is not for us to criticize the jury's action, although it may appear bold to have rejected the view expressed by the two skilled witnesses called by the prosecution. When a mother kills her own children the jury is almost certain to feel that there is a strong presumptive probability of her mental abnormality at the time of the act. And there is another factor which must be duly weighed. The law in this country prescribes a definite and unescapable sentence for the crime of wilful murder. Had this woman been found guilty of murder she must have been sentenced to death. The fact could

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not have been devoid of influence, although the jury might realize that there would be a strong probability of the death sentence being commuted.

Rex *v.* Frederick George Taylor.

This case was tried at Worcester Assizes on October 23, 1929, before Mr. Justice Acton.

The accused, æt. 32, was a metal caster. He was described, in the evidence, as having been an excellent husband and father, and as of exemplary character in all other respects. In the early morning of October 17 he attacked his wife and his two children with a chopper, and inflicted such severe injuries that they died soon after. He then telephoned to the police station, asking that an ambulance should be sent to his house, with a doctor "to put them out of their misery," adding, "I did not think they could live; I thought I had put them out first hit; I did not mean them to suffer at all." The facts were not disputed, and the defence was that of insanity.

Evidence was given that the accused had been depressed for some time before the occurrence, that he had complained of insomnia, and had worried, without any occasion, about not doing his work properly.

Dr. Edward Graham, medical officer of Gloucester Prison, said that Taylor appeared to have worried over a habit of masturbation, in which he had once indulged, and had the idea that he had contracted some form of venereal disease, which had caused him to lose his manhood, and had rendered him of no further use in the world. He also believed that he had infected his wife and children with the disease, that this would occasion intense suffering to them, and would cause them to be despised by other people. He took the view that "he was being punished for a very grievous sin." There was no evidence that he had ever suffered from any form of venereal disease. Dr. M. Hamblin Smith, medical officer of Birmingham Prison, stated that he had examined Taylor, and entirely agreed with Dr. Graham's findings. Both witnesses took the view that Taylor "knew the nature and quality of his act," but did not "know that the act was wrong."

The judge, in his summing-up, held that all the evidence pointed to the existence of insanity at the time of the act. A verdict of "Guilty but Insane" was returned, and the usual order for detention was made.

Rex *v.* Maggie Alexander.

This case was tried at Winchester Assizes on November 27, 1929, before Mr. Justice Charles.

The accused woman lived with her parents. She was charged with the murder of her child, by cutting his throat with a razor. When asked by her mother why she had killed the child, the accused said that she "thought he would be better off." That she had

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committed the deed was not disputed, the defence being that of insanity. There was evidence that she was subject to somnambulism, and that, previous to the date of the offence, she had suffered from acute mental distress. It appeared that she had been infatuated with a man; that her parents had told her that she must make an end to this connection, and that, unless she did so, she would have to find a permanent situation, and her child would be sent to an institution. There was also the history of her having been "thrown over" a few years before by a young man, just previous to the date which had been fixed for her marriage.

The most important medical evidence was that given by Dr. W. R. K. Watson, Medical Officer of Brixton Prison, who had had two long interviews with the accused. He had formed the conclusion that she was not insane. Her history led him to the opinion that she was subject to somnambulism. He regarded her statement that she did not remember the commission of the act as true; but he considered that this amnesia might be due to the repression of a painful incident. A woman walking in her sleep would not have her mind consciously functioning; she would not know the "nature and quality" of her act, or its "wrongness"; but her mental state would not amount to insanity in the medical sense of that term.

The judge, in his summing-up, said that the accused would not be responsible if she did not know what she was doing. If, however, she killed the child because she was unhappy, or because she feared that he was about to be taken from her, then she would be responsible. If the jury accepted the suggestion that the accused suffered from somnambulism, and if they considered that she committed the offence during a state of somnambulism, so that she would not know what she was doing, she would then be irresponsible. The jury must give the accused the benefit of any reasonable doubt which they might feel.

The jury returned a verdict of "Guilty but Insane," and the usual order for detention was made.

So far as can be judged from the newspaper reports, the defence of acute mental distress, occasioning irresponsibility, and of somnambulism, producing a similar effect, appear to have been set up as alternatives. It is, of course, impossible to say which alternative was accepted by the jury. Doubtless a criminal act committed in a condition of somnambulism falls within the McNaghton criteria. But such a condition does not amount to insanity; and, if the jury accepted the defence that the act was committed during a state of somnambulism, the case affords one more instance of the irrational character of the verdict of "Guilty but Insane."

Rex *v.* James Lucas.

This case was tried at the Central Criminal Court on November 18, 1929, before Mr. Justice Talbot.

The prisoner, æt. 32, a carman, was charged with the murder of Francis Marden on October 12, by cutting his throat in a street in

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Islington. The prisoner was employed in the service of the railway company. Marden and a friend named Warden met the prisoner, and spent about an hour with him, gambling by tossing coins in the street. Warden won a few shillings; the prisoner stated that he had lost £2 5s.; the deceased man must have won over £2. The prisoner asked Marden for the price of a drink. Marden refused this, but gave him a penny for his bus' fare. The prisoner walked away. Five minutes later Warden heard a noise, turned round, saw blood coming from Marden's throat, and saw the prisoner just behind Marden, who then collapsed with a large wound in his throat. The prisoner walked away, and half an hour later arrived at the house of his brother-in-law, looking "dazed," and said he had "been in a bit of a row," but gave no particulars. When a police officer came to arrest him the prisoner said, "I know nothing." Later he said, "I remember putting my horse away, and I don't remember anything more." On the day after his arrest the prisoner had a fit at the police-station.

Evidence was given to the effect that the prisoner had always been a quiet, hard-working man, and had never exhibited any tendency to violence. He had an operation for mastoid disease while in the army, and developed epilepsy after this. He had been treated at St. Bartholomew's Hospital, where he had once had a fit. He had been treated for epilepsy by other doctors. Dr. M. Finucane expressed the opinion that the prisoner had an attack of *petit-mal*, followed by post-epileptic automatism. The prisoner, in his own evidence, stated that he remembered nothing of the meeting with the two other men, or of the gambling, or of the attack on Marden.

So far as can be gathered from the newspaper report, the prosecution did not contest the epileptic theory. The prisoner was found "Guilty but Insane," and the usual order for detention was made.

Rex *v.* James McGough.

This case was tried at Manchester Assizes, on November 26, 1929, before Mr. Justice McNaghten.

The accused, a labourer, æt. 58, was charged with the murder of Charles Holden, with the murder of John Allen, with inflicting grievous bodily harm upon Thomas Forshaw, and with wounding John Partington. All these four men were fellow-workmen of of McGough's, who was also charged with attempted suicide.

The evidence was that on July 2 McGough was with Holden. Half-an-hour later Holden was found with his head battered in. McGough returned, and beckoned to Forshaw. On the latter's approach, McGough gave him a terrific blow with a bar, on the back of the neck. After this, McGough attacked Partington. Allen was found lying in a pool of blood, with a fractured skull and four wounds on the head. A police-constable found McGough on the floor, with a wound in the throat. McGough said, "All right; I won't hurt you." When taken to the hospital he said, "They

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will never plague anyone else; I have taught them a lesson." It was denied that McGough had ever been annoyed by fellow-workmen.

The defence was that the offences were committed during a post-epileptic state. Medical evidence was given in support of this view. Dr. F. C. Logan, of Prestwich Mental Hospital, said that the pressure of McGough's cerebro-spinal fluid was much increased.

The accused was found "Guilty but Insane," and the usual order for detention was made.

The apparently indiscriminate and motiveless violence in this case is very suggestive.

Easton *v.* Potts and Johnson.

The Plaintiff, Mrs. Jane Easton, brought an action against Dr. W. A. Potts, of Birmingham, and Dr. A. V. Johnson, of Aldridge, Staffs, for alleged negligence in certification. The Master had refused an application by the defendants that the action should be stayed, and Mr. Justice Finlay had affirmed this decision. On December 18 the matter came before Lord Justice Scrutton and Lord Justice Greer in the Court of Appeal.

Lord Justice Scrutton, in giving judgment, stated the facts of the case. In 1926 Mrs. Easton was staying with a friend in Staffordshire. This friend, as also the plaintiff's sister, who was sent for, took a serious view of the plaintiff's mental condition. The defendants were called in; they certified the plaintiff, and she was removed to an institution. There was evidence that she had a delusion to the effect that people could, by means of hypnotic influence, have carnal knowledge without touching each other, and that a man whom she saw for the first time had done this some time before. She also had the idea that everyone had some kind of aura of smell, and stated that she could smell one of the doctors prior to his entering the room.

The Lord Justice said that the jurisdiction which the Court was asked to exercise presented great difficulty. The liberty of the individual must be protected. On the other hand, it was equally important that doctors should be protected in the performance of a public duty imposed upon them by the law. Recent cases had shown that doctors might be unwilling to certify persons who should have been under care and control. In this particular instance no jury ought to find that the plaintiff was not reasonably certified. Both the Judge and the Master had found that there was no lack of honesty on the part of the defendants. The only question was whether the defendants had acted with reasonable care. He decided that they had done so, and that there was no evidence upon which a jury could reasonably find otherwise.

Lord Justice Greer concurred. The appeal was, accordingly, allowed, and the action was stayed.

The decision may serve as an antidote to the effect of certain recent cases, which have, undoubtedly, occasioned disinclination on the part of doctors to sign certificates.

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Occasional Notes.

LUNACY AND MENTAL DEFICIENCY IN 1928.

(*England and Wales.*)

Lunacy.

The Board of Control, in their Report for 1928,* again lament the postponement of legislation to give effect to the recommendations of the Royal Commission which reported in 1926. They state that "while the delay is unavoidable, it is none the less regrettable that the poorer classes should continue to be denied facilities for voluntary treatment (*i.e.*, without certification) in the early and hopeful stages of mental disorder which are open to those more fortunately circumstanced." As to how far the Board has been appeased by the Mental Treatment Bill of 1929, should it become law in approximately the same form as it left the House of Lords, remains to be seen. Until the Bill reaches the statute-book the Board has perforce to remain silent, but it was not so in the days of Lord Shaftesbury, whose vigorous protests as the then Chairman of the Board against the lunacy legislation proposed in the 80's by the Government of the day, though in vain at the time, may yet bear fruit.

The number of new cases (2,787) in 1928 was above the average (2,149) for the last five years. An unusually heavy incidence in the early part of the year, indeed, occasioned much anxiety, particularly in view of the small margin of beds available. Fortunately, the rate for the whole year showed a smaller increase than was at first expected. The Board point out that the figures for any one year do not warrant the drawing of deductions, and make the interesting observation that when the average yearly incidence of the most recent quinquennium is contrasted with averages of previous like periods, there appears no ground whatever for the oft-repeated suggestion that the stress of modern life has resulted in an abnormal increase in insanity.

The total number of notified cases in England and Wales on January 1, 1929, was 141,080, or in other words, about 3·57 per thousand of the population. In round figures there is an increase

* *Fifteenth Annual Report of the Board of Control.*—Part I. H.M. Stationery Office, 1s. 9d. net.

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of approximately 2,000 cases a year, but this, it should be noted, does not represent a growth in the incidence of lunacy. Such factors as the greater longevity of the patients themselves, mainly due to better conditions, and the increase of the general population, especially the adult population, sufficiently account for the yearly increases.

But while the Board have no anxiety on the score of the growth of lunacy, they draw attention to what they term "the riddle of the recovery-rate." This rate last year, calculated on the number of direct admissions, was 30·84%. A similar rate has prevailed for a very long period of years. As the Board state, after taking into account various considerations affecting the computation of "recoveries," the continued apparent failure in this important matter is disappointing. There is one noteworthy exception—the success attending the treatment of general paralysis of the insane by induced malaria. This disease is present in some 6% of the total admissions and in as many as 11% of the male admissions. The modern treatment of the condition, hitherto regarded as practically hopeless, has been the subject of an exhaustive report* by Surgeon Rear-Admiral Meagher, one of the Board's Inspectors. Cases treated by the new method in England and Wales from 1922 to 1927, numbering 1,500, were taken into account and contrasted with untreated cases in the same period. The results indicate that this treatment, especially when applied in the early stages of the disorder, is a most encouraging advance, and definitely offers hopes of improvement in many cases.

On the scientific side there is an increasing tendency to link up the hospitals with the Medical Schools. The benefits are mutual, and cannot fail to result in the progress of research and teaching in mental disorders.

The need for beds remains acute. Some relief is to be expected when the Local Government Act, 1929, is applied, but this, in the Board's view, will not obviate the necessity for the provision of new hospitals in the near future.

Mental Deficiency.

The Board point out, as we have often done in these columns, that many of the questions involved in mental disorders and mental deficiency are but different aspects of what is in reality one problem. The Board would like to see more frequent use made of statutory provisions which would enable one Committee, instead of two, to deal with both subjects—a step which would ultimately enable one

* *General Paralysis and its Treatment by Induced Malaria.* H.M. Stationery Office, 1929. 2s. net. (Summarized in our October number, 1929.)

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body alone to consider all matters in the area related specifically to mental health. This, as far as we know, has the unanimous support of the Association.

Little progress has been made during the year to meet the shortage of accommodation referred to in the Board's previous report. But five new institutions were opened, and several big schemes are now well advanced. The delay in providing adequate accommodation is partly attributable to the passing of the Local Government Act. Local Authorities have felt uncertainty as to the future, and perhaps too much is expected from the transfer of Poor Law Institutions to the Councils. The Board, however, warn Local Authorities that while some of the surplus Poor Law buildings may be very useful as auxiliary accommodation, their use for mental defectives, owing to the nature of the premises and the lack of ground, will be no substitute for properly equipped colonies offering the facilities for employment and recreation which are essential to the successful handling of the younger and higher-grade cases. The passing of the Local Government Act will have one important effect upon the administration of the Mental Deficiency Acts, in that the Committees will now have the duty of ascertaining and dealing with defectives in Poor Law Institutions or in receipt of outdoor relief. Indeed, for the first time, unified control becomes possible, and all defectives within the area, other than those dealt with by the Education Committee, will be brought within the scope of the Mental Deficiency Committee.

The Board refers to the publication of the Report of the Joint Committee on Mental Deficiency,* and the Report of an investigation carried out under the direction of the Committee by Dr. Lewis, one of the Board's Inspectors. These documents are of great importance, and indicate that the incidence of mental defect is much greater than has hitherto been supposed (*vide* Dr. Tredgold's paper in our October number, 1929). The Committee's Report should bring home to Local Authorities the extreme gravity of the social problem which mental deficiency presents.

Marriage of mental defectives and sterilization.—To its previous utterances on the subject of sterilization, the Board add some warnings as to certain fallacies which are current. They state:

> "It is, however, important to remove certain misapprehensions as to the possible financial savings which would result. It cannot be too emphatically stated that sterilization will not obviate the need for colony or other institutional treatment for large numbers of mental defectives. So far as the low-grade cases, idiots and imbeciles, are concerned, the need for institutional treatment is too obvious to need any argument. But in the case of the feebleminded, who form approximately three-quarters of the whole number

* *Report of the Mental Deficiency Committee.* H.M. Stationery Office, 1929. Parts I–IV, 5s. net. Part III, 1s. 6d. net.

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of mental defectives, it is not sufficiently understood that the great majority require care, supervision and control, because they are incapable of managing themselves. The majority of defectives cannot support themselves, many cannot resist criminal impulses, and others, though not actively dangerous, are a menace to the community, because they have no idea of truth or social obligation, and because they cannot keep themselves decently clean or observe the simplest rules of personal hygiene. Some have so little self-control that they are apt in moments of excitement to attack others and to commit crimes of violence, including arson. Many are sexually unrestrained or perverted, and are a constant danger to women and children. Anti-social tendencies and habits of this kind are not to be cured or even lessened by sterilization. As the provision of institutional beds is far below even the most conservative estimate of present needs, we hope that no Local Authority will relax their efforts because of any fallacious promise of what sterilization might achieve."

On the subject of marriage of defectives, the Board state:

"In our view it would be a valuable safeguard if the marriage of defectives, whether under order or under supervision, could be prohibited by law. It is astonishing that on grounds of so-called morality well-meaning persons are found to countenance and even to encourage the marriage of defectives who are not only obviously unfit to undertake the responsibility of parenthood, but are incapable of assuming the responsibilities of the relationship into which they propose to enter. A definite prohibition of the marriage of defectives would prevent unions which are socially disastrous, and would make it much easier to secure the protection of young defectives under supervision or guardianship or on licence by bringing home to the public conscience the anti-social character of any overtures towards persons definitely stamped as incapable of valid marriage."

We hope in a special article now in the course of preparation to review further the Board's activities during the past three or four years which we have only been able to touch upon here and there, such have been the exigencies of space and time.

THE LOCAL GOVERNMENT ACT, 1929, AND ADMINISTRATIVE PSYCHIATRY.*

In common with all psychiatrists, we have been much concerned as to how the transfer of the powers and duties of the Poor Law Authorities to the County and County Borough Councils on April 1, 1930, will affect the care and treatment of those suffering from mental disorder or mental defect. This transfer will be a further step in the long-contemplated abolition of the Poor Law system, and its reconstruction on modern lines within the ambit of the local authority in each local government area.

Though the main provisions of the consolidating Poor Law Act of 1927 remain untouched,† the new authorities are now in a position, for the first time, to review the provisions in their areas for the treatment of the sick poor with a view to better organization and

* These comments in many details do not refer to Scotland.

† *Vide* Poor Law (H.L.). A Bill (as amended by the Joint Committee) entitled, *An Act to Consolidate the Enactments Relating to the Relief of the Poor in England and Wales*, November 19, 1927. H.M. Stationery Office. *2s. 6d.* net.

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economy. They will also have power to extend these provisions where necessary in consultation with the voluntary hospitals and other voluntary agencies.

Here, at last, is an opportunity for the treatment of the sick or defective in mind to be a part of general medicine. Isolation was no doubt at one time necessary to progress, and great headway has been made, but its continuance is not now in the interests of either psychiatry or general medicine.

The linking up of mental with general hospitals, which has made some progress recently, especially in London, is a notable step in this direction, and should also help in the solution of many difficulties which will arise in reorganizing and supplementing the existing provisions for the observation and ultimate disposal of Poor Law cases under the Lunacy Acts. New units for early cases will, we hope, be established in connection with the transferred hospitals.

Centralizing mental hygiene under one authority in a local government area for the administration of related Acts of Parliament, as advocated by the Association, is a sound policy. It is left to each local authority to devise, subject to the approval of the Minister of Health, machinery most suited to its needs.

The Council of the Association has issued a memorandum in which it is urged that the mental hospital and mental deficiency services should be administered and controlled by one *ad hoc* committee of the local authority in each administrative area. The Association has always taken the view that these subjects are one and the same problem, and that their dissociation would have deplorable effects. Although administratively the methods of dealing with the mentally afflicted and the mentally defective differ in many respects, this should not prevent them from being the concern of one body.

The memorandum goes on to define the kind of defective to be dealt with by this body, *i.e.*, one socially defective, whether intellectually defective or not.

Among the duties and responsibilities then, which will be taken over by the County and County Borough Councils are those of the Poor Law authorities under the Lunacy Acts and the Mental Deficiency Acts. These include the certification, and, in many areas, the reception and preliminary treatment of cases of mental disorder or mental defect among the poor.

Though at the moment there is no doubt as to the wisdom of the Council's recommendation in this connection, it does maintain a cleavage in the medical services of a local authority which will tend to maintain the isolation of psychiatry from general medicine —a position which we have commented on adversely.

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The Mental Treatment Bill recently introduced in Parliament proposes to make permanent this line of cleavage. Clause 7, Sub-clause I, enjoins that every local authority shall appoint a visiting committee which shall exercise the powers conferred by the Bill and also those of the principal Act except the power of raising a rate or borrowing money. The powers include the making of provisions for the reception of voluntary boarders and of non-volitional cases of mental disorder. The former is optional, the latter is compulsory.

Thus if this Bill becomes law the vexed question as to which committee of the local authority will be concerned with the provisions for early treatment of mental disorders among those needing public assistance will be determined for some years to come.

The Mental Treatment Bill, as a whole, shows a welcome advance. But can we say that its operation, in conjunction with the recent Local Government Act, will bring about conditions which may be considered satisfactory in every respect? The answer must, we feel sure, be "no": (*a*) The early but "unwilling" case of mental disorder, often as curable as the two classes for which special provision is contemplated, will still have to bear for all time the burden of the stigma of certification. (*b*) Psychiatry will continue to be divorced administratively from general medicine, though the co-operation of mental hospitals and public health services will be necessary if full advantage is to be taken of the favourable situation created by the new Local Government Act.

In regard to (*a*), the whole question of the admission of mental patients to treatment was discussed at the last annual meeting of our Association (*Journ. Ment. Sci.*, pp. 805–812), so no further comments appear necessary.

But on the latter question, (*b*), a good deal could be said did space allow.

We venture, however, to sum up the whole situation in the following words:

(1) As urged in the Association's memorandum, there should be no administrative or medical cleavage between mental hospital and mental deficiency services.

(2) The interests of psychological medicine will be better served by joining the stream of general medicine, and progress in the treatment of mental disorders will continue to be slow and erratic until this is accomplished.

(3) The ultimate ideal in regard to the administration of the medical services of a local authority is a scheme which will unite the mental and physical view-points of disease, and the line of cleavage where one is necessary should be that of treatment and

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prevention, and not of psychiatry and general medicine. A joint hospitals committee and a preventive medicine committee is a logical corollary.

(4) The administration of mental hospitals distinct from that of general hospitals tends to keep alive popular prejudice and ignorance regarding the essential nature of mental disease.

(5) It must be remembered that under the new Local Government Act a local authority will become an administrative authority, not only for mental diseases, but for the whole range of medicine.

Under the scheme suggested in (3) there would occur a commingling, on points of principle and hospital administration, of general and mental hospital ideals which could not be other than advantageous to the hospital services generally. It would assist in reducing to a minimum the differences—many quite unnecessary —which exist between the management of the two kinds of hospitals, and which undoubtedly are reflected in the different attitude the public takes towards them.

(6) In University centres with medical schools, the local authorities will, we hope, make available for teaching purposes the immense clinical field in their administration. This has already commenced in regard to mental diseases and some other departments of medicine. An extension embracing the whole medical curriculum and carrying with it reciprocity and co-operation between city and university or medical school, not only as regards educational work but including research, treatment and prevention of all mental and physical disease, is greatly to be desired.

To rest content with the present would augur badly for the future. Ideals must be formulated in advance if progress is to be made.

J. R. LORD.

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Part II.—Reviews.

Recent Advances in Psychiatry. By HENRY DEVINE, *O.B.E.*, M.D., B.S.Lond., M.D.Bristol, F.R.C.P.Lond. 1929. Size 5 in. × 8¼ in. Pp. x + 340. Price 12*s.* 6*d.*

When it became definitely known that Dr. Henry Devine was writing a book on psychiatry, many of us were agog as to what attitude he would take on matters about which there is no general agreement—indeed, many of them problems upon which each of us has individual views, such as the basis of mind, the relationship of mind and body, the pathology and psycho-pathology of mental disorders, etc. His writings hitherto, though not voluminous, had shown a rare psychological insight and we had come to put a high value on them.

Dr. Devine had given his friends the impression that he was searching for something of which he had from time to time a glimpse, but which faded away on his attempting to formulate it. It was not a case of a preconceived theory and the sorting out or discovery of evidence in support from the wealth of material at hand, the accumulation of recent years, probably the most productive years in the history of psychiatry, and much of it destructive to long-accepted beliefs and teaching.

Would he succeed? It was not surprising, then, that the book, when it appeared, was taken up with the greatest interest, and the answer to this question eagerly sought. With what result will now be our chief concern in this review.

This book has already been widely reviewed, while we have been closely studying it with deepening interest. One reviewer complains that Dr. Devine has been at more pains to illuminate a philosophical scheme of his own rather than present recent work on the subject, with explanatory or critical observations, which is the main purpose of books of this series; and more than this, that bias for his own view-point has led him to neglect important contributions and to present others in a one-sided manner.

It is quite true that the author has found that the many and varied facts at his command point to certain biological and psychological principles, the illumination of which he has made his main purpose, but strictly with an eye to the practical purpose of the restoration or maintenance of mental and physical health.

But this does not detract from the value of the book as a commentary on recent psychiatrical work, for the ground covered is immense. We feel sure that if anything of prime importance has been omitted it has not been by design. Having said this we do not propose to refer at any length to this aspect of the volume, but we

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would like it to be understood that in our opinion the object of the series of which this book is a volume is reasonably carried out.

We will now try and sort out from the mass of information those conceptions which the author thinks are fundamental to a proper understanding of mental disorders and their treatment.

The subject-matter of psychiatry is said to be the disorders of behaviour at the social or conscious level, and that of general medicine, disorders of behaviour at the unconscious, biological or physiological level. It is as a unit that the organism is concerned in both. So two forms of unitary behaviour are implicit: physiological and psychological. The fundamental fact about the living organism is that it is an organic unity with its ambit, *i.e.*, its vital activity is a response to environment and not purely internal. The ambit provides the living being with matter, energy and the excitants of vitality. Life is thus a correlation of two elements—an organism and a suitable milieu. It follows that physiological and psychological behaviour are inseparable; the former comprises those functions which are necessary for the maintenance of life, the latter the functions necessary to a proper adjustment of the individual to environment.

Rignano's teaching that the fundamental tendency of the organism is to maintain or restore equilibrium in its internal economy is adopted.

The necessity for supplying physiological requirements was the occasion of the dawn of psychic life. In undifferentiated feeling we have the primitive form of consciousness. Feeling is the symbol of an organic need and serves to guide the conative activities of life. Such interdependence of physiological and psychological behaviour is essential to mental life, and postulates an impregnation of the whole organism with psychism. The unicellular amœba performs all the essential physiological functions of the metazoic organism.

Organic behaviour depends upon individual and ancestral experiences. This implies organic memory: the past is active in the present. Assimilation, which distinguishes living from inorganic matter, is a mnemic activity.

Our author's views on vital activity may be summarized as follows: Life is essentially dynamic; life and mind are activities of a mnemic nature. Living matter remembers, inert matter does not. Life postulates two elements—an organism and its ambit. An organism and its ambit are a reacting unit and behave as such physiologically and psychologically. It is a biopsychic unit. In its internal economy it strives to maintain an equilibrium of chemico-physical processes. Disequilibrium creates physiological needs symbolized as primitive feeling, which guides conation. Adaptation to the external milieu follows, the resultant behaviour depending upon individual and ancestral experiences.

For support the author refers to the teachings of Haldane, Bergson, Rignano and Briffault.

Dr. Devine deprecates the tendency to separate physiological behaviour from "mental" behaviour. The line of cleavage should be between the living and non-living, and not between physiological

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and mental. "The distinction apt to be drawn between physiological activity and overtly manifested conduct is quite unjustified."

Head and Myers are quoted to emphasize the author's meaning. In reflex activities the object acquires a "meaning," for the reacting organism and the resultant conduct depends to a great extent upon what has happened before. The response is the end of a march of events and not of a series of disconnected episodes. Implicit in it lies the form of future events and the germ of conscious processes of memory and intention.

The same characters which distinguish living from dead matter distinguish nervous and mental activity from that of other living tissues, but on a higher plane. Thus activity at the conscious level must be considered as a modality or form of vital activity. Thought and consciousness cannot be considered independently of the organism. The organism the psychologist deals with is not merely physical but biopsychic.

Thus what Dr. Devine teaches is naturalism, pure and simple—the naturalism (or vitalism) of Aristotle, who taught that life is not a resident in the organism, but identical with it, and mind but its highest expression.

Our comments must now be brief. Has Dr. Devine merely endued in modern garb an old teaching, or has he added anything of material importance?

The reply seems to us to be that he has pointed out the importance of the ambit (he uses the word "ambiance" throughout, but we failed to find this in any dictionary) and its organic unity with the organism, and that this Aristotelean conception as re-stated helps us to the better understanding of many problems in the causation, symptomatology and treatment of mental disorders.

We welcome his book if for this latter reason alone. It satisfies all our expectations, though we may not be in agreement with all the author's deductions.

Consciousness is regarded by Dr. Devine as a relation. Not long ago we said: "Consciousness, at once the greatest fact and enigma of psychic life . . . stands for something, unknown and unknowable, which is not intrinsic to any psychic function, but apparently extrinsic and relative to each."

The "unconscious" of the psychopathologist and the stratification of the psyche, useful but hitherto purely theoretical formulations, obtain a measure of reality in the conception of mind presented by the author.

These matters, the psychogenesis of the psychoses, and a host of other problems which have proved a veritable battlefield for psychiatrists, might have met with an earlier solution had we—as we once wrote—"never wandered from the common-sense natural realism of Aristotle."

We regret we cannot continue our comments further, for there is, as we have said, a wealth of information in the book we cannot touch upon. We hope the book will have a determining effect on the education of young psychiatrists, who should make it an object of serious study.

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It is written in that inimitable style which distinguishes all Dr. Devine's writings. Dogmatic statements are avoided until the shadowy and illusive yields to the light of a full understanding. Then they become inevitable and are clearly and concisely put.

J. R. LORD.

Recent Advances in Neurology. By W. RUSSELL BRAIN, M.A., D.M.Oxon., M.R.C.P.Lond., and E. B. STRAUSS, B.A., B.M., B.Ch.Oxon., M.R.C.P.Lond. London: J. & A. Churchill, 1929. Pp. xii + 312. 38 Illustrations. Price 12*s.* 6*d.*

The value of a book of this kind depends on the choice of subjects and on the way in which they are presented. We can heartily congratulate the authors in both these respects. Neurology has a bearing on every department of medicine, in addition to many problems of its own in both theory and practice. Anatomy, physiology, pathology and psychology are constantly being illuminated by neurology. It is therefore a subject of great interest to many, particularly in respect of advances made in recent years. The authors had at their command a wealth of material, but in the limited space at their disposal all could not be included. A choice of subjects, therefore, became necessary, which obviously lay between theory and practice. The latter consideration prevailed, but the former was not excluded. It was decided that the book should be ancillary to applied neurology, and every subject, therefore, has some clinical bearing. In this way it was hoped to meet the needs of both student and general practitioner, especially the young practitioner studying for a special examination, in addition to the needs of neurologists and psychiatrists.

These intentions have materialized in a way which amply justifies the observations made at the beginning of this review.

Neurology and psychiatry are closely related. There is a physical side to every case of mental disorder which is not infrequently neurological, and the psychiatrist to be effective must be up-to-date in his knowledge of the physiology and pathology of the nervous system.

As it happened, this book teems with subjects of psychiatric interest. Though the matters dealt with are difficult, it is easy to follow the authors' presentation of them. They write clearly and succinctly, the discussions are well balanced and their conclusions concisely stated.

There is an excellent description of the circulation of the cerebro-spinal fluid for which all students will be grateful. The importance of the pathological relation of the pressure of the fluid to intracranial capillary and venous pressure is emphasized, as there is good reason to believe that the formation and absorption of the fluid are essentially processes of filtration. A chapter is devoted to "Conditioned Reflexes." The remarkable studies of Pavlov and their possible bearing on psychology has excited more and more attention

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since they became more accessible to English readers, and not a few think that he has provided a solution of many problems in both normal and abnormal mental activity. All the essential points of Pavlov's hypotheses are to be found in this chapter.

The functioning of the basal structures of the brain in some relation or other is a matter of increasing interest to psychiatrists. The chapters on "Posture and Tonus" and "Extrapyramidal Syndromes" are important in this respect. The chapter on "Sensation" clears up many doubts and will be welcomed by the student particularly.

Of direct interest to psychiatrists are the chapters on "Sleep," "Epidemic Encephalitis," "The Pituitary and the Hypothalamus," and "Miscellaneous Therapeutic Advances," and the Appendix on "Cerebro-spinal Fluid 'Pictures' in Various Common Neurological Conditions." The dominance of the cortex in the initiation of sleep, a theory much endangered by recent researches, receives much support.

Every page contains information which the neurologist cannot afford to neglect.

The book is a most creditable performance, but we wish publishers would have more regard to the weight of paper used. Though of average size, weight makes reading a fatiguing matter

J. R. LORD.

Practical Clinical Psychiatry for Students and Practitioners. By EDWARD A. STRECKER, A.M., M.D., and FRANKLIN G. EBAUGH, A.B., M.D. London: H. K. Lewis & Co., Ltd., 1928. Second edition. Demy 8vo. Pp. xviii + 458. With 30 illustrations. Price 18*s.* net.

We gave this book an extended review on its first publication in 1925, and commended it to our readers as supplying a much-felt need. In proof of this a second edition, revised and enlarged to meet modern requirements, has been submitted to us for review. Its size has been increased from demy to crown octavo and its pages from 375 to 458.

There has been no change in the plan of the book or in its purpose, which is mainly educational. More than any text-book we know of, it teaches us *how* to study cases of mental disorder by direct observation and examination. This is the only way of attaining a sound knowledge of clinical psychiatry.

It may be observed that no one is so confused and helpless in the presence of sickness as one who has a good book knowledge of medicine or some branch of it, but is without adequate clinical experience. A thousand and one facts crowd into consciousness, and the result is doubt and inhibition. This is probably more true of psychiatry than of any other branch of medicine.

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But to set about and obtain that practical knowledge necessitates the adoption of some definite system of proceeding. The best way no doubt is to select a good clinical manual, like the one under review, and given the opportunity of practical experience, to adhere closely to its teaching.

It is in this sense that we can again heartily commend this book to junior psychiatrists. The clinical types as set forth should first be mastered before going wider afield.

As far as we know, the book has had no rivals. In its revised and enlarged form it should continue to serve its purpose amply for some years to come.

We will now describe briefly the principal revisions and additions which have been found necessary to bring the book up to date.

The section on ætiology has been much amplified. Predisposing factors are given as heredity, the life period, environmental factors (including occupation, racial strains and previous attacks). Exciting factors are physical (including infections, exhaustion, endocrine deficiency or imbalance, endogenous and exogenous intoxications, metabolic deficiencies such as pellagra, chronic infections such as syphilis or tuberculosis, chronic somatic diseases, organic nervous diseases, head trauma and sunstroke) and psychic (including fright, shock, worry).

A useful anthropometric chart is added to the section on the examination for personality types. Two types are distinguished: thick-set pyknics and slender leptics—a good division.

The description of general paralysis is amplified. A new section (21 pages), is devoted to the treatment of neuro-syphilis by inoculation with tertian malaria. Improvement in varying degrees is recorded in 35 to 50% of cases. Mental alertness tests are used to ascertain whether there is improvement or not. The introductory description is also amplified in the sections on senile psychoses, that on epilepsy greatly extended and much re-written. There is a new clinical section devoted to "bromide intoxication." The chapter on dementia præcox is much enlarged, chiefly in regard to ætiology, pathology and modifiability.

Additional short sections are on "The Management of Behaviour in Children who have had Encephalitis" and on "Physical Habitus and Mental Disease." Finally the authors have deemed it advisable to add a chapter (XIII) on the elements of the "Psychological Conception of Mental Disease." This will be read with interest, as it was not mentioned at all in the first edition.

The subject is dealt with sympathetically but critically under the following heads: Historical, the psychological conception and its premises, mental processes in insanity and in health (logical *versus* emotional thinking, normal and abnormal mood, day-dreaming and fantasy), psychological mechanisms, with summary and remarks.

The authors conclude that many modifications will have to be made and many old concepts abandoned before anything like scientific accuracy in psychopathology is attained. They say it must be confessed that we really know nothing definite about any basic

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factor underlying the direction of the stream of consciousness, and finally we cannot be absolutely sure whether the psychological and physiological conceptions are, in the last analysis, absolutely separate entities and opposed to each other. All these conclusions commend themselves to us, and in regard to the latter we have already expressed our opinion in our review of Dr. Devine's *Recent Advances in Psychiatry* (*vide* p. 126).

Our final words are addressed to young psychiatrists: Obtain this book, and, to use an Americanism, "get down to it." You will never regret it. J. R. LORD.

The Imprisoned Splendour: Aspects and Applications of the New Psychology. By R. DIMSDALE STOCKER. Brussels: Elmer S. Prather, 1929. Crown 8vo. Pp. 184. Price 4*s*.

This is a series of ten essays, remarkable for the insight they show into human nature and the functioning of abstract qualities in man. These inner endowments, if allowed a chance of normal functioning, are regarded as the "splendour," "the greatest, most effulgent glory of life." How by artificial modes of life they come to be "imprisoned," and their release is Mr. Stocker's theme.

He pleads for a conception of socialism far removed from the economic and political creed which goes by that name to-day. Human life must be revolutionized from within, not merely quantitatively, but qualitatively. Man is too much the victim of the self-repression imposed by the modern civilized state. He has wrong conceptions of idleness and leisure.

He lives in bondage to the theory of the "dignity of labour." Sacrifice he has come to regard as a universal law. To exist he must have money, and for this he must toil.

He suffers from the strain and tension of baulked desires. The natural promptings of self have to be repressed beyond the dictates of reason. He is taught that Godliness and Nature are in incessant and eternal conflict. From time to time he rebels and offends the body social. He is tormented with doubts, difficulties and uncertainties, and suffers much internal turmoil where peace and contentment should reign.

All this is brought out in chapters devoted to "The Myth of Laziness," "Life, Leisure and Drudgery," "Social Discipline and Relaxation," "The Right to be Happy," "Our Baulked Dispositions."

Mr. Stocker is not alone in voicing the view that modern civilization is fast arriving at breaking-point, if it has not already cracked. A re-assessing of values in life is undoubtedly needed—one which would restore to man the consciousness that he possesses a soul, that he has the right to freedom and happiness.

There is much wisdom to be found in this book, and no one can but be the better for reading it.

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Other chapters are more psychological, but have some bearing on the main theme. The last chapter on "Reincarnation" is descriptive of the "Seven Ages" of Shakespeare's sylvan philosopher.

There is some fine writing in this book, the last chapter being a literary masterpiece. J. R. LORD.

Sleep and the Treatment of its Disorders. By R. D. GILLESPIE, M.D., M.R.C.P., D.P.M. London: Baillière, Tindall & Cox (Minor Monograph Series), 1929. Size 7½ in. × 5 in. Pp. ix + 267, figs. 5. Price 7*s.* 6*d.* net.

Dr. Gillespie has to be congratulated upon producing a book the value of which well repays the immense labour which it without doubt occasioned. It is a monograph in that it gives expression to the material facts of present-day knowledge on sleep, balancing the different views held, and where called for submitting them to a detached and critical examination.

The result is a useful work which should be in the possession of every medical practitioner, for surely disorders of sleep are as common as they are difficult to treat. Under these circumstances the prevention of these disorders is of more immediate importance than treatment, but for both, especially the former, a knowledge of the physiology of sleep is essential, otherwise there can be no proper understanding of the pathology of sleep and of its clinical manifestations. The author therefore approaches the subject from a study of its physiology and patho-physiology.

The book, however, is essentially clinical in nature, for one-half of it is devoted to a consideration of the disorders of sleep and their treatment, which is an additional recommendation.

A section devoted to theoretical considerations Dr. Gillespie wisely leaves to the concluding chapter.

It is impossible in a short review to go fully into the details of the author's presentation of his subject, but some note may be made of views which seem personal to the author.

Organized and useful movements can occur during sleep—for instance soldiers sleeping on the march—but such are of an automatized kind and direct responses to immediate stimuli. Intelligent activity does not occur in normal sleep nor in its pathological variants except in "somnambulism," in which condition "sleep" in an ordinary sense is a misnomer.

In discussing the basic metabolic rate during activity, rest and sleep, Dr. Gillespie points out that "Qui dort, dine" is true enough, and that it is often better to prescribe more sleep than more food for children to meet extra energy requirements. Sweating during sleep is principally a matter of insufficient ventilation of the body, too many bed-clothes and a stagnant atmosphere. A consideration of urinary secretion during sleep in the light and in the dark goes to show that darkness alone economizes wear and tear of the organism.

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In sleep there is certainly a *saving* of energy, but of a restorative process there is but little evidence.

Common beliefs in the calamitous effects of insomnia have little support clinically or experimentally. When experimentally induced the objectively measurable mental effects have been slight, but subjectively the discomfort has been intense. It is true, however, that sleeplessness aggravates an existing psychosis.

The author discusses no less than 18 sleep disorders, about all of which he has something both useful and interesting to say.

One may search medical text-books in vain for any reference to that very common and trying condition known as "cramp," which usually occurs either on waking or slightly before. We presume Dr. Gillespie refers to this under "Sleep-Pain." No remedy is apparently known except morphine. Suffering humanity over forty-five would like to know more about the condition and would bless whoever found a simple remedy.

The chapter on treatment contains many valuable original observations. Included as an appendix is a section devoted to the treatment of psychoses by prolonged sleep. The author concludes that the advantages are more administrative than therapeutic.

We scarcely dare comment upon the author's dissertation on the many theories of the nature of sleep or we may be led into undue prolixity. This is perhaps the most fascinating problem in neurology and is most ably presented in this final chapter.

J. R. Lord.

The Health of the Mind. By J. R. Rees, M.D., Deputy Director of the Tavistock Square Clinic. London: Faber & Faber, Ltd., 1929. Crown 8vo. Pp. xiv + 261. Price 6*s*.

In a recent review we spoke critically of mental hygiene literature generally—of a want of real insight, too much enthusiasm and sensationalism, the development of a jargon, and mainly verbosity and vacuity.

In none of these respects does Dr. Rees offend, and his book is the best contribution to mental hygiene literature we have come across for some time. It is simple and lucid. It is not a profound book, nor is it meant to be, but it presents a difficult and rather elusive subject in language and style which will be easily understood by the intelligent layman for whose instruction and guidance, especially if he be a parent, the work is primarily intended.

It deals sympathetically and helpfully with problems which face men and women in all stages of life, and the reading of it will bring contentment and satisfaction to many people who are worried and anxious about either themselves or their children.

The plan of the book is simple and convenient, and the author's survey of his subject comprehensive.

The evolution of modern psychology and its relation to the mental hygiene movement is given a prominent place as the subject of the first chapter. The four chapters which follow are anatomical,

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physiological and psychological. Chapter VI deals with "Mental Breakdown, its Cause and its Cure." So far Dr. Rees does not depart from commonly accepted teaching, and he treats both the physiogenic and psychogenic schools with a fairness which shows a broad and a detached outlook. If anything he is more a Freudian than a follower of Jung or Adler. He regards the Freudian theory as the most scientific of the three schools of thought which have a common basis in the idea of the unconscious mind. Like many others he sees a possibility that Pavlov's theory of conditioned reflexes may supply the link between physical and mental activity. His optimism is not supported by Pavlov himself, who advises caution in any such application. As an actual fact this Russian genius puts a surprisingly high value on what he calls "the subjective," which he regards as the beginning and the end of all things.

The importance of the vegetative nervous system and endocrine functions is much stressed and illustrated by simple everyday emotional experiences.

Some ten pages are devoted to the multitudinous ways in which the body processes affect mental activity. "The two are inseparable, and mental health can never be attained if we shut our eyes to things physical." Mind affects body through the autonomic or vegetative system. Dr. Rees is clearly an interactionist, but of that school which recognizes mind as a psycho-physical activity. This teaching avoids philosophical pitfalls and complications. It is difficult, for instance, to apply to the practical necessities of life the teaching of mind and body as being only different aspects of one and the same thing.

The personality and practical experience of the author find expression in the succeeding chapters. Our comments up to now go to show that this work has not been written for the purpose of Freudian propaganda. Such teaching is given a legitimate and fair place. Three excellent chapters deal respectively with "Problems of Early Life," "Problems of Childhood and Adolescence," and "Adult Problems," and the final chapter is on the "Art of Adjustment."

The author recognizes that religion is necessary for a healthy state of mind, especially that effective side of religion which transfers interest from unworthy to worthy objects in life.

The book can be recommended to and by all practitioners of medicine, especially psychiatrists. We are confident that it will find a worthy place in mental hygiene literature for many years to come.

J. R. LORD.

Experiments with Handwriting. By ROBERT SANDEK. London: George Allen & Unwin, Ltd., 1928. Royal 8vo. Pp. 394. Illus. 107, collected and separable from book, and contained in a slip on end cover. Price 18*s*.

Mr. Sandek is also the author of a clever book entitled *The Psychology of Handwriting*, which has excited a good deal of interest

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and bids well to become a classic on the subject. This and the present work will undoubtedly give a much-needed impetus to the study of graphology in all its bearings.

The book before us now is of a more technical character, and is representative of 26 years of patient research into the fundamentals of graphology. It will be readily admitted that a sound basis is essential if practical graphology is to invite and receive the confidence of the judicature.

It cannot be doubted that the expert in handwriting has in the past been looked at askance in legal cases, both by the public and the Courts. This has not been entirely his own fault. His subject and methods have long needed revision, and too much has been expected of him in the past. Though this is true, he has not altogether been guiltless of straining his knowledge and capacities.

Mr. Sandek has altered all this. It was with the intention of putting the subject on a sound basis, with an eye to its practical application, that he undertook this extensive research into the principles and doctrines of experimental graphology, and especially the means of avoiding erroneous judgments in the identification of disputed handwriting and the investigation of forgeries. He, of course, has attempted more, and he claims to have successfully established character-reading from a study of handwriting by strictly scientific methods. From the evidence adduced it would be difficult to resist his claim, and we freely confess that we are greatly impressed by both his methods and his general results. The reader must, however, judge for himself on this more problematic aspect of graphology. But the real point of importance is the detection of dishonesty, either potential or actual, and in regard to this the author, we think, makes out a sound case.

The author's scientific attitude to his subject leads him to reject all graphological doctrines which cannot be proved by systematic experiment or by a wide statistical inquiry. The entirely new doctrines he now puts forward are all supported in this way, and we feel fully justified in saying that as an outcome of Mr. Sandek's labours graphology has been rejuvenated and become a true science.

While, of course, the book is primarily meant for the enlightenment of graphologists and jurists, it is of considerable interest to the psychologist. To the psychiatrist it will not appeal to the same extent, for the application of graphology in the differential diagnosis of nervous and mental diseases is not specially undertaken. Mr. Sandek's fundamental work, however, opens up a new prospect in this direction, which should attract those on the look-out for a promising line of psychiatric research. J. R. LORD.

A New Primer of Psychology. By MAHAJOT SAHAI, M.A., Professor of Psychology at the Mohunda College, Patiala. London: Macmillan & Co., Ltd., 1928. Crown 8vo. Pp.viii + 190. Price 3*s.* 6*d.*

The author's purpose is to weld together as far as possible new and old conceptions into a systematic statement of all the broad

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facts of mental life and one which will prove useful to the beginner in psychology.

It is a cleverly written and reliable compendium, easily understood, a pleasure to read and very suitable for its purpose.

It obviously emanates from an experienced teacher and can be recommended with confidence. Its price should be noted—it compares favourably with that of many a book on this subject not half so informative or well written. J. R. LORD.

Science and Personality. By WILLIAM BROWN, M.A., M.D., D.Sc. London: Humphrey Milford, Oxford University Press, 1929. Demy 8vo. Pp. x + 258. Price 12*s.* 6*d.* net.

This volume consists partly of an expansion of certain lectures delivered by the author in the United States of America, and partly of papers read by him elsewhere. It exhibits the wide range of interests which we have learned to expect from Dr. Brown. But we feel that his treatment of the subject suffers to some extent from the fact that the book is a collection of essays rather than a continuous exposition.

Dr. Brown begins with a review of the religious attitude towards the universe, after which he considers the present position of the physical sciences, pointing out how recent theory has materially altered the old conception of matter. He then deals with the biological sciences, and discusses the question of emergent evolution. He is doubtful whether we should be justified in holding the doctrine of an emergence of the mental from the non-mental. Science, he maintains, necessarily leads either to philosophy or to metaphysics. He then proceeds to psychology, and elaborates the thesis that man's highest pursuits are the eternal values of truth, goodness and beauty. He holds that religion corresponds, ultimately, to an adequate sense of values.

The subject of mental unity and mental dissociation is then taken up. Dissociation is not essentially pathological. No mind is completely normal, since no mind completely solves its problems from day to day, and it is the failure to solve mental problems which is the most general cause of mental disease.

A chapter on the various theories of suggestion leaves us in some doubt as to which it is that Dr. Brown favours. Perhaps no theory is entirely satisfactory. There follows a discussion on the unconscious mind. While fully recognizing the value of Freud's contribution to psychology, Dr. Brown criticizes certain parts of the Freudian theory. He also describes, although very briefly, the theories of Jung and of Adler. But here again the reader is left in some uncertainty as regards the author's personal position. It is not clear in what way, Dr. Brown's method of "deep analysis" differs from orthodox psycho-analysis. He combines deep analysis with suggestion; and claims that, in this way, the treatment of some cases can be materially shortened. He is careful to distinguish between the psycho-analytic method and the body of doctrine

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known as psycho-analysis. This distinction is of much importance. It is possible to investigate any problem, whether individual or general, in the light of the psycho-analytic theory. The application of psycho-analytic treatment is not always practicable. Dr. Brown urges that an analyst must be more than a psychologist; he must know the problems of philosophy, and (we would add) of religion, as they present themselves to the individual mind.

Dr. Brown dislikes, we think quite justly, the term "libido," and prefers that of "vital urge." We would suggest that "conatus" is even better; it is free from unfortunate connotations, and seems to be quite satisfactory, when used in the Spinozan sense.

A discussion of religion and health leads to the problem of spiritual healing. Dr. Brown holds that much of the difficulty in this matter arises from a lack of psychology on the part of physicians and theologians. The psychological line of investigation is, he maintains, a solution, and not a compromise. It is, at least, certain that if the medical profession insists upon a materialistic view of disease processes, teaches an epiphenomenalistic theory of the psycho-physical relation, and neglects the psychological point of view, the treatment of "functional "diseases will tend to fall into non-medical hands.

Returning to religion, Dr. Brown regards faith as corresponding to the "will to believe" of James. Faith is a belief in value, a determination to trust in the good; it may be conscious or unconscious. He criticizes the conception of a "personal" God. If the term "personal" is employed in its old, anthropomorphic sense, it is, no doubt, open to grave objection, for it implies a limitation and an exclusiveness. But personality, as Dr. Brown says, is more than individuality. It is true that a person may be regarded as something which is isolated from other persons. But a person may also be considered as a centre of unity—something which is not divided in itself. The one and the many is the ultimate philosophical problem. Present-day science is tending to look upon the apparent many as the resultant of a few principles. It is not a long step to a belief in one explanation of everything, and the term "God" may be usefully taken as meaning ultimate reality.

Finally, Dr. Brown indicates his well-known interest in the subject of psychical research. He claims that this line of inquiry has demonstrated the existence of certain phenomena, which are worthy of the fullest scientific investigation. More than this cannot be said at present, nor does Dr. Brown attempt to say more. He admits that the scientific evidence for the survival of personality after bodily death is not very strong. He gives some details of his experiences with a "medium." The dangers inherent in modern spiritism are obvious. And there is a further point. Assuming that communication with "disembodied spirits" were possible, it is far from certain that such communication would be of advantage to mankind. This is a matter which the advocates of spiritism do not appear to have considered sufficiently.

M. HAMBLIN SMITH.

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The Physiology of Love. By GEORGE M. KATSAINOS, Ph.D., M.D. Boston, U.S.A.: Privately printed, 1929. Medium 8vo. Pp. 326. Price not stated.

This is a curious book. Its main thesis is that the sex act in man is not a purely physiological procedure. It would seem scarcely necessary to maintain so generally accepted a position, at such a length; nor does the author confine himself to this subject. He roams over a wide field. He surveys the cosmos, and concludes that nature is a reaction to a force that will ever remain unknown. He discusses the possibility of the cessation of the sun's radiation, and cheers us by deciding that this contingency may be dismissed. He touches on social problems, of which he is disposed to take a gloomy view. It is a moot point whether he is more severe upon his native country (Greece), or that of his adoption (America).

He maintains that sexual desire in man differs essentially from the corresponding desire exhibited by other animals; in the latter it is inherent, inherited, spontaneous; in the former it is acquired, taught, gained by imitation. He maintains that a male and a female child placed on a desert island, provided with food, but isolated from all possible instruction, or source of initiation in sex matters, would never combine to reproduce their species. Such an experiment is, of course, impracticable. But the author expands this thesis into the realm of matters which can be tested. He maintains that the practice of masturbation is invariably taught, and is never spontaneously acquired. While admitting that initiation by another is the most frequent event, we think that few students of this subject would assent to the author's sweeping statement in this respect. He will not allow the term "masturbation" to be applied fully to manipulation of the genital organs prior to puberty.

He deals with *coitus interruptus*, and points out the disastrous results of this wide-spread practice. It is something to find an author who correctly employs the term "onanism" for this procedure, and does not fall into the common error of using it as a synonym for masturbation. The evils of sex promiscuity and the dangers of pre-marital sex adventures are adequately handled, although we are told nothing which is at all novel in this connection. The fundamental part that marriage and the family play in our present social system is insisted upon. We are told that "the hymn of victory which will celebrate the escape of humanity from venereal disease will, at the same time, sound the funeral knell of married life."

The treatment of homosexuality is entirely unsatisfactory. The author insists that homosexuality, in men and women, is always the result of satiety with heterosexual practices; he does not appear to recognize the existence of sex inversion.

The presence of strong conflicts in the mind of the author is very apparent. "Away with such ravings," "blasphemy," "a woeful mistake" and similar expressions occur frequently, when he is dealing with the opinions of those with whom he disagrees. He

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speaks of the urine as an " unsightly and malodorous secretion " ; but he waxes quite lyrical when describing the beauty of a virginal pudendum.

Plato, Lucian and other classical writers are freely quoted. But recent work on sex matters is almost entirely ignored. The well-known book *Psychopathia Sexualis* is referred to, and the authorship of this is actually attributed to Freud.

We cannot feel that Dr. Katsainos has added anything to our knowledge of the subjects with which he deals.

M. HAMBLIN SMITH.

The Trauma of Birth. By OTTO RANK. London: Kegan Paul & Co., Ltd., 1929. Demy 8vo. Pp. xvi + 224. Price 10*s.* 6*d.* net.

Dr. Rank's contention is that every analysis ultimately turns out to be a belated accomplishment of the incompleted mastery of the birth trauma. This primary trauma has to be overcome by each individual, and its conquest occupies the whole of childhood. Every child suffers from anxiety, as a consequence of the birth trauma. From the stand-point of the healthy adult the childhood of any individual may be styled the normal neurosis. In certain cases this neurosis is continued into adult life.

Such, put very briefly, is the thesis maintained in this book. On this foundation Dr. Rank has erected an imposing super-structure. He traces the influence of the birth trauma in causing infantile anxiety, in sexual gratification, and in neurotic development ; and he deals with the effects of the trauma in producing symbolic adaptation, religious sublimation, artistic idealization and philosophic speculation. Nothing less than the entire process of civilization is comprehended, and no reader can fail to be impressed with the ingenuity of the author.

When, however, we come to consider the basis upon which this striking hypothesis rests, we experience no small amount of doubt. The observed facts upon which Dr. Rank relies are only hinted at, and we are told, in more than one place, that this matter is reserved for a future work. His position is far more difficult to defend than the orthodox Freudian theory. For the trauma of birth is far more deeply repressed than the Œdipus complex. The latter can—or so psycho-analysts believe—be logically demonstrated. We do not imply that Dr. Rank is unable to provide logical demonstration of his position, but we are obliged to say that he has not, as yet, done so.

Dr. Rank hints at certain modifications of the usual psycho-analytic technique which he has adopted, but he tells us very little about them. He speaks of the " restful position in a half-darkened room, the dreamy state of phantasy (hallucinations) almost free from any of the claims of reality." We do not think that many psycho-analysts would accept as accurate such a description of an

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analysis; and the half-darkened room is, so far as we know, peculiar to Dr. Rank.

The discussion of the mechanism of schizophrenia is especially interesting, and is worthy of careful consideration. In this instance Dr. Rank tells us more about the material upon which his conclusions are based; and in this he appears to agree more fully with ordinary psycho-analytic theory. In connection with the general thesis adopted in the book, it would be of interest to know what, if any, special characteristics are shown in the neuroses and psychoses developed by patients who were delivered by Cæsarean section.

The book is of value in so far as it calls our notice to the importance of the experience of birth—a subject which has, perhaps, been somewhat overlooked. But psycho-analysis has made progress, as every science must make progress, by a patient building upon the foundation of observed facts, and by elucidating the correspondence of such facts with an explanatory theory. We feel that Dr. Rank's thesis must, at present, be regarded as not proven.

M. HAMBLIN SMITH.

Two Essays on Analytical Psychology. By C. G. JUNG, M.D., LL.D. London: Baillière, Tindall & Cox, 1928. Demy 8vo. Pp. xvii + 280. Price 10*s.* 6*d.*

These two essays are an enlargement and reconstruction from the "Papers" collected by Constance Long, and published some years ago by the same firm. They aim at giving such a general conception of the subject matter as may stimulate interest and lead to more extensive studies. This aim they seem admirably to fulfil. The essays are ably translated by Dr. H. G. Baynes, whose style of English is lucid and pleasing.

The subject-matter will to a large extent be familiar to such readers as are well acquainted with the other works of Jung. The first essay is entitled "The Unconscious in the Normal and Pathological Mind." After sketching the origins of psycho-analysis, and describing the apparent conflict between the views of Freud and Adler, the author suggests that the secret of this conflict may be found in differences of mental type, either in the analyst himself, or in his patient. He does not, in this book, elaborate his views on "Type Psychology," and probably has saved the essay from a great deal of confusion.

He differentiates between the personal unconscious and the super-personal, or collective, unconscious, and refers to the archetypes, the inherited potentialities of human thought. He gives an interesting sample of the method of analysis he is accustomed to practise.

The second essay is divided into two parts. The first is devoted to the effects of the unconscious upon consciousness. He states

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what he means by distinguishing the personal unconscious from the collective unconscious, and describes possible results of the attempt to bring about assimilation of the unconscious.

A chapter is devoted to the persona—"only a mask of the collective psyche, a mask that is a substitute for individuality, intending to make others as well as oneself believe that one is individual."

The second part of the essay is devoted to individuation, the coming to selfhood, self-realization.

There is a final interesting chapter on "The Mania Personality," which illustrates the wealth of knowledge which Jung has acquired.

Many parts of these essays are difficult to follow, though the whole is illuminated with quotations from a wide range of literature. One is doubtful of the value of these psychological meanderings into infinity, but they are certainly the work of one who has a profound knowledge of the human mind. For alienists their value is probably small; but those who wish to have a complete series of Jung's works and who enjoy the mental agility necessary to elucidate the contents, may well expend a half-guinea to purchase this book. The printing is clear, and attractive binding makes the volume pleasant to handle, a credit to its publishers.

The Truth About Mind Cure. By WILLIAM S. SADLER, M.D., F.A.C.S. London: George Allen & Unwin, Ltd., 1929. Crown 8vo. Pp. 206. Price 5*s.* net.

This little book makes no pretence of being a scientific treatise; it is an expansion of a popular lecture which the author has delivered in various parts of America. Dr. Sadler recognizes that much of the current cults of "mind-healing" is due to the neglect by the medical profession of the real influence which mind exercises over body. He is careful, however, to urge that no form of psycho-therapy should be initiated until the possibility of organic disease has been eliminated by physical examination. The book contains a considerable amount of good advice, couched in homely and trenchant language. The evil influence of morbid fear and worry is pointed out. There are some excellent aphorisms, *e.g.*, that the best prescription for the victim of worry is "A good job, a good fad, and a good religion." Some of the anecdotes which Dr. Sadler tells of his dealings with patients sound somewhat undignified to our ears; but it is, perhaps, no ill thing for us to be warned that it is possible to stress unduly our professional dignity.

M. HAMBLIN SMITH.

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Western Australia: State Psychological Clinic. Annual Report for the Year 1928–29. Perth, 1929. Pp. 26.

Miss Ethel T. Stoneman continues the excellent work upon which we have commented in previous years. In addition to the cases referred from schools, courts, and other public institutions, the clinic deals with a considerable number of private cases, many of which exhibit serious character deviations. Several interesting lines of current research are mentioned. An investigation of the intelligence of aboriginal and half-caste children shows them to compare unfavourably with white standards; some curious sex differences are noted. A start has been made with an investigation of the poorer school work shown by high-school girls of 15 years, as compared with the same girls at 14 and 16 years (no similar temporary lowering of performance being noted among boys). The possible influence of suggestion must not be overlooked here. If a girl knows that she is expected to do badly at a particular age, she may do badly. Most interesting of all is an analysis of the results obtained by giving the Pressey emotion tests to a post-adolescent group. It is becoming clear that such estimation of emotional reactions is of the utmost importance. The "fears" and "likes" exhibited by the boys and girls respectively are worthy of further consideration.

The social harm occasioned by the absence of legislation dealing with mental defectives is referred to, and striking examples are provided. A start has been made in vocational guidance by a psychological investigation of apprentices to the printing trade.

M. Hamblin Smith.

A Pocket Case-Book for Assistant Medical Officers in Mental Hospitals. Messrs George F. Healy & Co., 23, Lower Ormond Quay, Dublin. Price 1*s.* 6*d.*

This pocket case-book has been devised by Dr. R. Thompson, of St. Patrick's Hospital, Dublin, in the hope that it will be an aid to precision in case-taking.

Indicated on the printed page is what the author considers to be the *minimum* amount of inquiry to be conducted in *every* case.

On the obverse side of the printed page is provided sufficient space to record the result of the clinical examination. A blank interleaf is for the recording of the history.

The booklet is only intended for notes later to be transferred to the hospital case-book or other form of permanent clinical records.

It is emphasized that a knowledge of the character and disposition of the patient before the illness is essential in deciding the nature of the disorder, its probable course, and the treatment to be adopted.

J. R. Lord.

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Part III.—Epitome of Current Literature.

1. Neurology.

The Behaviour of Certain Lipoids during the Process of Myelinogeny. (*Arch. of Neur. and Psychiat., June*, 1929.) *Cornwall, L. H., and Brickner, R. M.*

Before and during the early stages of myelin formation in rats, there are globular elements in the ventricles, in the pia-arachnoidal spaces and in the periphery of the neuraxis. These were shown not to consist of triolein, oleic acid or combinations of these substances with cholesterol. Osmic acid did not furnish any clue as to the identity of the globules. Saturated fatty acids, glycolipins or lipochrome could not be identified in the neuraxis by the method of Ciaccio either before or during the process of myelin deposition. By the methods of Fischler, Fischer and Klobz some evidence is found to indicate that the fibre systems contain calcium soaps before they receive their myelin, and that before and during the medullation fatty acid can be identified in the blood-vessels of the neuraxis and in the spaces of the pia arachnoid. The choroid plexus of the fourth ventricle and the pia-arachnoid spaces of the brain of rats at birth contain glycogen. The authors could find no evidence that myelin is formed by a gradual synthesis of simple lipoids. It apparently makes its appearance in approximately the same state in which it exists throughout the life of the organism.

G. W. T. H. Fleming.

Studies in Chronaxia: 1. *Methodology and Normal Variation, with a Report on Thirty Cases in Children.* (*Arch. of Neur. and Psychiat., September*, 1929.) *Wechsler, D., and Freeman, R. G.*

The normal chronaxia of various muscles in children aged from 7 to 12 years is the same as that in the adult. The range of normal chronaxia is roughly as 1 : 2. The method for measuring chronaxia as perfected by Bourguignon is simple in both principle and technique, but requires too much time to be of any great clinical use. The method permits the measurement of individual differences in normal neuro-muscular excitability. G. W. T. H. Fleming.

Tonus in Skeletal Muscle in Relation to Sympathetic Innervation. (*Arch. of Neur. and Psychiat., August*, 1929.) *Forbes, A.*

Forbes concludes from his survey of the evidence that in skeletal muscle there is only one type of contraction. The apparent difference between tonus and other forms of contraction is superficial. Tonus depends for its sustained character and economy of energy on the sequence of individual responses, and their distribution among the numerous fibre groups which constitute the entire

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muscle. There is no foundation for the view that the sympathetic nervous system controls a plastic element in tonus functionally distinct from so-called contractile tonus. All contraction, tonic or phasic, disappears when the somatic motor nerves are cut. The severance of sympathetic nerves does not lead to the disappearance of tonus. Any effect sympathetic innervation may have on tonus is due either to circulatory changes or to some obscure physico-chemical effect of excitation through this channel, analogous perhaps to secretion. There is some evidence that such an effect exists, not causing contraction, but tending to allay fatigue and facilitate the continuance of contraction evoked through the somatic motor nerves. The author considers that ramisection for the relief of spastic paralysis rests on a basis of speculation and mis-interpretation of experimental evidence. In view of the physiological evidence, re-education appears to be the only therapeutic agent that can have any real effect in these cases.

G. W. T. H. FLEMING.

The Parasympathetic Control of Muscle Tonus. (*Arch. of Neur. and Psychiat., August*, 1929.) *Ranson, S. W.*

Ranson states that a histological demonstration of parasympathetic nerve-endings in the mammalian limb muscles has not yet been given. It remains an open question whether or not there are any efferent fibres in the dorsal roots; even if these are absent, the possibility of antidromic conduction over the sensory fibres, as postulated by Langley for vaso-dilation, remains.

G. W. T. H. FLEMING.

The Nervous Regulation of Sugar Metabolism. (*Arch. of Neur. and Psychiat., November*, 1929.) *Hiller, F., and Tannerbaum, A.*

I. The authors as the result of experiments on rabbits, consider that the dorsal vagus nucleus in the floor of the fourth ventricle has no more to do with the regulation of the blood-sugar than any other part of the nervous system, irritation of which leads to a moderate hyperglycæmia. Irritation of the vestibular system, especially the region of the nuclei of Deiters and Bechterew and their fibre connections with the cerebellum, of the cerebellum itself, and also of the labyrinth, leads to a considerably higher rise of the blood-sugar than other lesions of the medulla oblongata. This result rather does away with the idea that the lesion acts on sympathetic fibres, since according to present knowledge afferent sympathetic fibres do not run through the cerebellum. The regulation of blood-sugar cannot be ascribed to definite centres; hyperglycæmia is produced through afferent stimuli of widely varying nature.

II. These two authors experimented on rabbits by cutting the vagus nerve in the neck on one side, and found a primary irritation of the cells of the vagus nucleus on that side, but no reaction on the opposite side. In three rabbits when the sympathetic trunk was cut on one side the vagus nucleus was quite unaffected. They

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also showed that no direct communication exists between the hypothalamus and the dorsal vagus nucleus, the sympathetic trunk or, any other medullary region. The authors conclude that the dorsal vagus nucleus is a collection of purely vagus cells, and is not directly subordinate to the hypothalamus.

G. W. T. H. FLEMING.

The Relation of the Cervical Sympathetic Trunk to Cerebral Angiospasm. (*Arch. of Neur. and Psychiat., September*, 1929.) *Meagher, P. H., and Ingraham, F. D.*

The authors, experimenting on cats, found that stimulation of the cervical sympathetic trunk by faradization on one side, in the presence of ligation and division of the common carotid artery of the opposite side, is not attended by convulsions.

G. W. T. H. FLEMING.

The Cerebral Circulation. XI. The Action of Acetylcholine, Pituitary (Posterior Lobe) and Amyl Nitrite. (*Arch. of Neur. and Psychiat., October*, 1929.) *Wolff, H. G.*

The author, by means of windows screwed into trephine openings in the skulls of four cats, was able to observe directly the effect of the injections of acetylcholine. He found dilatation of cerebral arteries, veins and minute vessels; at the same time there was usually a rise in the cerebro-spinal fluid pressure and a fall in the systemic arterial pressure. This action is similar to that of histamine, acetone and lactic acid. In the regulation of the diameter of cerebral blood-vessels, the chemical content of the blood is of greater importance than its hydrostatic pressure.

Extract of the posterior lobe of the pituitary causes a definite, though not very pronounced constriction of the pial arteries, arterioles, veins, venules and minute vessels.

The inhalation of amyl nitrite causes dilatation of the cerebral vessels, a fall in systemic arterial pressure and a rise in cerebro-spinal fluid pressure. The colour of the blood often changed to a brown or chocolate colour. G. W. T. H. FLEMING.

Traumatic Cerebral Hæmorrhage. (*Arch. of Neur. and Psychiat., November*, 1929.) *Martland, H. S., and Beling, C. C.*

Injuries to the head with slight or no evidence of other external injuries are followed by death in some cases, or by clinical symptoms indicating structural damage to the deeper parts of the brain. The damage to the brain consists of minute multiple, punctate hæmorrhages distributed chiefly in the areas supplied by the terminal branches of the central ganglionic system of vessels. They are rarely seen in the cortex or below the tentorium cerebelli. The frequency of these hæmorrhages in the basal ganglia, the authors think, must be due to a *contre-coup* effect. Microscopically the hæmorrhages are seen to surround the vessels, filling the Virchow-Robin spaces in a ring-like manner. The authors think that the mechanical theory of Cassasa appears to be the best explanation

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of these hæmorrhages. In all these cases the question of fat-embolism has to be considered. The clinical picture may resemble that of paralysis agitans, disseminated sclerosis, progressive lenticular degeneration or chronic epidemic encephalitis.

G. W. T. H. FLEMING.

A Thalamo-capsular Syndrome from Softening of the Area Supplied by the Anterior Choroid Artery. (*Riv. di. Pat. Nerv. e. Ment., September*, 1928.) *Poppi, U.*

The author favours a vascular classification of the various syndromes due to softening in the thalamus. He describes a case of softening in the area supplied by the anterior choroid artery. This vessel supplies the dorso-lateral and ventro-lateral nuclei of the thalamus, the body of Luys, the external part of the tuber cinereum and the mamillary bodies. The hemiplegia which results is due to the lesion in the posterior arm of the internal capsule. The loss of superficial sensation is due to the lesion of the dorso-lateral and ventro-lateral nuclei of the thalamus; that of deep sensibility to the lesion of the ventro-medial nucleus. The unequal temperature on the two sides of the body is probably due to lesion of the tuber. The paralysis of the ocular sympathetic is due to the lesion of the hypothalamic nuclei. The athetoid movements are due to disturbance of the cerebello-rubro-thalamic tract.

G. W. T. H. FLEMING.

A Contribution to the Study of the Syndrome of the Red Nucleus. (*Riv. di Pat. Nerv. e Ment., September*, 1929.) *de Giacomo, U.*

The author quotes a case in which the lesion was confined to the region of the left red nucleus. There was complete paralysis of the oculomotor nerves on the left and, in the right extremities, disorders of cerebellar type with intention tremor and hypotonia. There was a slight weakening of the deep reflexes on the affected side. The onset was sudden during the course of a malarial attack and was due to a hæmorrhagic lesion. The destruction of the regio parvicellularis of the red nucleus gives rise to a contra-lateral hypotonia. There is not sufficient evidence to say that a lesion of the regio magnocellularis of the red nucleus would cause a hypertonia. The author considers that the red nucleus is an important centre in the descending cerebello-rubro-spinal tract for the control of tone.

G. W. T. H. FLEMING.

Remarkable Extrapyramidal Involuntary Movements. (*Arch. of Neur. and Psychiat., June*, 1929.) *Goodhart, S. P., Wechsler, I. S., and Brock, S.*

The authors present a series of six cases with unusual dyskinesias, including a case of hemiballismus, two cases with unique dystonic syndromes, and a juvenile case of chronic degenerative chorea with mental changes. They consider that in dystonia musculorum deformans, although the lesion occurs chiefly in the basal ganglia, midbrain mechanisms are nevertheless involved.

G. W. T. H. FLEMING.

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The Diagnosis and Treatment of Post-encephalitic Parkinsonianism, with Case-reports. (*Journ. of Nerv. and Ment. Dis., June,* 1929.) *Patry, F. L.*

Epidemic encephalitis behaves like a chronic disease; the toxins have a definite tendency towards the involvement of the brain-stem and corpus striatum. The earliest symptoms of Parkinsonianism may be so slight as to pass unnoticed. The patient feels there is "something wrong"; later he feels weary and there is reduction of vigour. The customary symptomatology subsequently develops. The author gives hyoscine hydrobromide by the combined method (hypodermically and orally) in gradually increasing doses from gr. $\frac{1}{200}-\frac{1}{50}$. In association with this he uses general ultra-violet radiation, remedial physical exercises and occupational therapy. The improvement continues only so long as the drug is given. No untoward symptoms from the drug are noted even over a number of years. G. W. T. H. Fleming.

Sleep and Epidemic Encephalitis. (*Journ. of Neur. and Psychopath., January,* 1929.) *Altshuler, I. M.*

It is the opinion of the author that there is not sufficient evidence for the acceptance of a regulating sleep centre anywhere in the midbrain, that "properly speaking, there are no centres for sleep," and that sleep is the expression of the work of an instinct strengthened by habit, and regulated by conditioned reflexes. In pathological states where the cortex is directly or indirectly involved, the signalling of conditioned reflexes for sleep becomes irregular and inadequate; thus, states of sleepiness, sleeplessness or irregularity in rhythm are the result. Wm. McWilliam.

Arteriosclerotic Parkinsonianism. (*Brain, April,* 1929.) *Critchley, M.*

The author considers that cerebral vascular disease may give rise to the complete picture of Parkinson's disease: incomplete forms are commoner. All gradations occur, from the mildest degree of hypokinesis and hypertonus (arterio-sclerotic rigidity) up to forms which are barely distinguishable from classical paralysis agitans.

For convenience of description he subdivides cases of arterio-sclerotic Parkinsonism into five clinical types: (1) Early cases characterized by some immobility of expression and short-stepping gait; (2) cases forming part of the pseudo-bulbar syndrome; (3) cases associated with marked intellectual defect; (4) pyramido-pallidal syndromes; and (5) cerebello-pallidal syndromes.

There are several clinical points of distinction between the arterio-sclerotic varieties of Parkinsonism and cases of idiopathic paralysis agitans:

Symptoms may commence suddenly in the arterio-sclerotic cases, although an insidious onset is more usual. The progression is more rapid and may proceed by a series of abrupt exacerbations. The age of onset is approximately the same in the two conditions, but an

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unusually early or a very late age for commencement of symptoms suggests a vascular basis.

In the arteriopathic cases tremor is usually absent, the muscles feel firmer to the touch, and the rigidity is often characterized by a superadded tendency towards katatonia.

Many of the arterio-sclerotic cases have "bulbar" signs and emotional incontinence. A large number, too, show a more or less profound dementia.

The presence of other focal cerebral symptoms (of aphasic, apraxic, cerebellar or pyramidal nature) argues in favour of an arterio-sclerotic basis.

Evidence of disease in the cerebral or peripheral blood-vessels is present in the arterio-sclerotic varieties; the blood-pressure is often high, although it may be low in the senile or decrescent types of arterial degeneration.

The pathological appearances vary greatly in character and diffuseness; the essential features comprise lesions in the globus pallidus, and, to a lesser extent, in the substantia nigra, directly consequent upon vascular disease.

Pallidal lesions must not be regarded as the only cause of the clinical appearances, for changes at other levels can be demonstrated as contributing towards the rigidity. Thus, mental impairment, pyramidal disease, changes in the peripheral nerves and in the muscles, tendons, joints and blood-vessels of the extremities, all play a part in producing a hypertonic-hypokinetic syndrome.

By isolating an arterio-sclerotic variety, the author gives support to the conception of Parkinsonism as a syndrome which may occur under numerous pathological circumstances. It is the site rather than the nature of the disease that produces the characteristic clinical picture. G. W. T. H. FLEMING.

Encephalo-myelitis Disseminata. (*Arch. of Neur. and Psychiat., October*, 1929.) *Spiller, W. G.*

From a consideration of two cases of encephalo-myelitis disseminata the author concludes that at present it is not possible to draw a distinction between this disease and multiple sclerosis. He found that the numerous cells about the vessels appeared to be identical with lymphocytes, but in the medulla oblongata some of them resembled gitter-cells. G. W. T. H. FLEMING.

Pyramido-pallidal Degeneration Syndrome due to Multiple Sclerosis. (*Arch. of Neur. and Psychiat., July*, 1929.) *Nielsen, J. M., Wilson, D. C., and Dieterle, R. R.*

Combined syndromes of the pyramidal and extrapyramidal systems are rare apart from their occurrence in cases of encephalitis. Occasional cases have been reported due to cerebral arterio-sclerosis and degeneration in the basal ganglia and crossed pyramidal tracts of the cord. The authors present a case of multiple sclerosis with

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spastic paraplegia below the waist, and a paralysis agitans syndrome and astereognosis above. The disease began when the patient was 50 years old and continued for 23 years. Pathologically there were numerous pea-sized greyish plaques in the brain and cord. The brain-stem was clear of plaques. G. W. T. H. FLEMING.

Multiple Sclerosis; The Sensation of an Electrical Discharge as an Early Symptom. (*Arch. of Neur. and Psychiat., July*, 1929.) *Lhermette, J.*

The sensation of an electrical discharge is an early symptom of multiple sclerosis. It is also found in spinal concussion. This symptom is brought on by activities which cause flexion of the spine, particularly of the cervical region, and often appears before there are any definite signs pointing to multiple sclerosis.

G. W. T. H. FLEMING.

Changes in the Spinal Cord in Anæmia. (*Arch. of Neur. and Psychiat., November*, 1929.) *Weil, A., and Davison, C.*

The authors use the classification of the anæmias drawn up by Morawitz and Denecke and that of Henneberg for the different forms of myelitis. From a survey of the literature and a consideration of their own material, the authors conclude that genuine degenerative myelitis is found only in hæmolytic anæmias, mostly in the form of subacute combined degeneration. The changes mentioned were not found in anæmia resulting from increased loss of blood, in hypoplastic anæmia or in chlorosis. In the leukæmias the pathological changes in the spinal cord are mainly those of myelomalacia, being produced by vascular changes such as hæmorrhages and perivascular infiltrations. In anæmias combined with severe cachexia and with neoplastic disease, the changes in the spinal cord could often be traced to other diseases, such as arteriosclerosis and syphilis. The theory that cancer produces a specific toxin and acts destructively on the spinal cord could not be substantiated. Besides its occurrence in pernicious anæmia, combined degeneration is only found in rare cases of hæmolytic anæmia due to infestation with *Bothriocephalus latus*.

G. W. T. H. FLEMING.

A New Sign of Cerebellar Disease. (*Journ. of Nerv. and Ment. Dis., May*, 1929.) *Wertham, F. L.*

The author describes a method of graphically recording arrhythmokinesis, or the inability to perform rhythmic movements continuously by tapping. The mechanism is fundamentally the same as that underlying the adiodochokinesis of cerebellar disease. The outstanding features of arrhythmokinesis are—irregularity in amplitude of action currents, their continuation long after the mechanical movement has apparently stopped, and considerable lack of synchronous relations between flexor and extensor action currents. G. W. T. H. FLEMING.

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Tumours of the Temporal Lobe. (*Riv. di Neurol., February,* 1929.) *Gozzano, M.*

The author considers that it is possible to diagnose tumours of the temporal lobe not only by exclusion but also by positive signs. He quotes 6 cases of his own with autopsy records. Four showed facial paralysis, contralateral hemiparesis, and homonymous hemianopsia of the opposite side. In 3 cases there was disturbance of gait and hypoacusis. Two cases showed partial oculomotor paralysis, paralysis of the abducent and hypoglossal nerves, muscular hypotonus and disturbance of smell.

G. W. T. H. FLEMING.

The Argyll-Robertson Sign in Mesencephalic Tumours. (*Arch. of Neur. and Psychiat., July,* 1929.) *Wilson, S. A. K., and Gerstle, M.*

The authors record two cases of midbrain tumours presenting Argyll-Robertson pupils. The first was a spongioblastoma multiforme which had completely destroyed the region of the anterior colliculi. The second was a highly vascular glioma which had invaded and destroyed the whole of the region of the anterior colliculi, leaving the crura and the tegmentum generally intact.

G. W. T. H. FLEMING.

A Clinical Study of Twenty-one Cases of Tumour of the Hypophyseal Stalk. (*Brain, July,* 1929.) *Beckmann, J. W., and Kubie, L. S.*

The authors describe, largely from a clinical point of view, twenty-one cases of tumours of the hypophyseal stalk. Early evidence of increased intracranial pressure occurs only when the disease becomes manifest in children and adolescents. Pain and headache are of no value in differential diagnosis. Endocrine disturbances were manifested in the ten younger patients by failure of growth and normal sexual development. Obesity occurred either early or as a late development. Where it occurred in males, the body-form became suggestively feminine. Evidence of pressure on the brain-stem and basal ganglia is seen more frequently in tumours of the hypophyseal stalk than in adenomata or endotheliomata.

G. W. T. H. FLEMING.

Diencephalic Autonomic Epilepsy. (*Arch. of Neur. and Psychiat., August,* 1929.) *Penfield, W.*

Penfield describes an interesting case of epilepsy in which the attacks consisted of motor phenomena in the control of the vegetative nervous system. The irritative source of the attacks was evidently an encapsulated tumour in the third ventricle, which periodically pressed on the thalamus of both sides. The vegetative nervous system appears therefore to be represented as high as the anterior nucleus of the thalamus. The attacks took the following course: (1) Prodroma (restlessness), request for ice to suck; (2) sudden

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vaso-dilatation of skin in area supplied by cervical sympathetic, sudden rise in blood-pressure; (3) lacrymation, diaphoresis, salivation, dilatation or contraction of the pupils, protrusion of the eyes, increase of rate and pressure of pulse, marked retardation of respiratory rate, elicitability of pilomotor reflex, loss of consciousness (rare); (4) disappearance of superficial blush and fall of blood-pressure, slowing and weakening of pulse; (5) hiccuping; (6) transient shivering; (7) Cheyne-Stokes respiration (apparently the result of, but not an intrinsic part of the attack).

G. W. T. H. FLEMING.

Hepatic Percussion Zones in Essential Epilepsy. (*Journ. of Nerv. and Ment. Dis., July*, 1929.) *Weingrow, S. M.*

In 82 adult cases of epilepsy the author found that there was a definite reduction in the percussion area of the liver.

G. W. T. H. FLEMING.

Amaurotic Family Idiocy. (*Amer. Journ. Psychiat., May*, 1929.) *Hassin, G. B.*

In this paper the author presents a short series of clinical and pathological studies, illustrated by six plates, and various aspects of the subject are presented in a discussion which follows.

WM. MCWILLIAM.

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2. Psychology and Psycho-Pathology.

Studies in Stuttering: V. A Study of Simultaneous Antitropic Movements of the Hands of Stutterers. (*Arch. of Neur. and Psychiat., September*, 1929.) *Travis, L. E., and Herren, R. Y.*

In simultaneous antitropic movements of the two hands the author found that right-handed normal speakers with a history of right-handedness lead more frequently with the left hand; right-handed normal speakers with a history of left-handedness lead about as often with one hand as with the other; left-handed normal speakers with a history of left-handedness lead more frequently with the right hand; and right-handed stutterers, regardless of a positive or negative history of left-handedness, lead more frequently with the right hand. There were fewer right-eyed subjects among the right-handed stutterers than among the right-handed normal subjects with a history of right-handedness.

G. W. T. H. FLEMING.

Conditioned Reflexes. (*Arch. of Neur. and Psychiat., September*, 1929.) *Schilder, P.*

The author carried out experiments on five human subjects, and found that the phenomena observed are the same as observed in animals. During the establishment of conditioned reflexes there

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are complicated psychic processes and adaptations, which the author supposes also occur during the conditioning of reflexes in animals. G. W. T. H. FLEMING.

Anxiety States. (*Brit. Journ. of Med. Psych., May,* 1929.) *Hadfield, J. A.*

Hadfield considers that the difference between normal fear and anxiety does not lie in the excess of bodily movements as such, but in the damming back of the normal expression of fear, so that it fails to express itself in normal activity, and discharges itself in activities within the organism itself connected with the autonomic nervous system. He disagrees with Jones as to the cause of anxiety, and considers that the factor predisposing to future anxiety states is the occurrence of some marked cause of fear in infantile life. Watson has shown that the infant reacts by fear to two sets of conditions—(*a*) noise, (*b*) the withdrawal of support. Pavlov has shown that a conditioned reflex of fear in dogs tends to persist as a neurosis.

Experiences of this kind occurring in infancy leave their mark on the whole life. The child reacts by egoistic self-assertiveness, or tends to seek protection by being amenable, suggestible and moral. These are the typical character traits of the patient suffering from anxiety, and it is the threat to these that precipitates the anxiety of later life. G. W. T. H. FLEMING.

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3. Clinical Psychiatry.

Order of Birth and Size of Family. (*Amer. Journ. Psychiat., May,* 1929.) *Dayton, N. A.*

This paper reports the findings as to order of birth and size of family from the examination of 10,455 retarded children in the public schools of Massachusetts.

Among the conclusions reached are—(1) the order of birth of the retarded or mentally defective child is apparently of little significance. (2) Families having a mentally defective child show a tendency to be larger than families having a retarded child.

WM. MCWILLIAM.

A Method of Integrating Physical and Psychiatric Examination. (*Amer. Journ. Psychiat., July,* 1929.) *Levy, D. M.*

In this paper the physical examination of patients is dealt with in a most comprehensive manner, with special reference to such mental features as body interest, over-protection, response to growth and sex difference, and their bodily correlations.

Twenty cases go to make up this study, and all are discussed from the physical aspect, with subsequent comment on various psychological features. Findings are tabulated as far as is possible, and there is a detailed summary of the conclusions arrived at.

WM. MCWILLIAM.

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Tests of Reaction Time and Motor Inhibition in the Psychoses. (*Amer. Journ. Psychiat., July*, 1929.) *Saunders, E. A., and Isaacs, S.*

The specific purpose of this investigation was whether there is any significant difference, that might be used for diagnostic purposes, in the average time of reaction of various types of psychotic subjects as compared with the normal, and whether there is any significant difference in the degree or type of variability in the reactions.

In a lengthy paper, the technique of the tests, the apparatus employed and the results are fully discussed.

The cases are described, and there are statistical tables and a considerable bibliography. WM. MCWILLIAM.

The Quantitative Estimation of Sudoriferous Activity and its Relation to Temperament. (*Journ. of Neur. and Psychopath., July*, 1928.) *Chevens, L. C. F., and Mumford, P. B.*

The authors in this article attempt to correlate sweat loss with mental disease, and conclude that except in primary dementia, and possibly in mania, no such correlation is apparent. The symptom occurs in the mentally healthy and also in imbeciles.

They state that when changes do occur in psychotics they may be explained on the basis of a need for heat dispersal as a direct consequence of increased heat production, or may be regarded as changes coexistent with temperamental variations in response to a primary alteration of metabolic activity. WM. MCWILLIAM.

The Adrenalin Blood-pressure Curves in Dementia Præcox and the Emotional Psychoses. (*Amer. Journ. Psychiat., July*, 1928.) *Kanner, L.*

Dr. Kanner deals with the effect of adrenalin on blood-pressure in cases of dementia præcox and the "emotional psychoses," and advocates this test as a routine procedure in mental hospitals. He gives case-histories and "adrenalin curves" of 43 cases, 34 of which are dementia præcox. All of these latter yielded vagotonic curves, the degree of vagotonia depending on the degree of emotional indifference. Five cases of either maniacal excitement or depressive agitation yielded typically sympatheticotonic curves, and three of stuporose melancholia vagotonic ones. WM. MCWILLIAM.

Development of Intelligence in Children after Epidemic Encephalitis [*Die Entwicklung der Intelligenz bei kindern nach Encephalitis epidemica*]. (*Psych.-Neur. Wochens., No.* 50, *December* 15, 1928.) *Lange, W.*

The author carried out Binet-Simon tests on 39 post-encephalitic children, of whom 20 showed character changes, and 19 suffered from varying degrees of Parkinsonianism. He finds that the greatest amount of defect is present in those children in whom the infection occurred before the fifth year. In general the children with character changes grade higher than those with Parkinsonianism;

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in these latter there was very little improvement from hyoscine treatment. These patients' further progress is slow, so that their mental age falls more and more below their actual age. The author draws attention to a peculiar form of rapidly progressing dental caries, affecting mainly the incisors, occurring in Parkinsonians, and probably due to defective innervation and consequent failure of the normal antiseptic mechanisms of the buccal cavity.

A. WALK.

Psychogalvanic Studies on Affective Variations in the Mentally Diseased. (*Arch. of Neur. and Psychiat., October*, 1929.) *Westburgh, E. M.*

The author examined groups of patients with various mental diseases. As a group, subjects with dementia præcox tend to have lower resistances than depressed or normal subjects. Patients with katatonic dementia præcox give the smallest galvanic deflections. There appears to be an emotional blocking as well as retardation in thought and motor activity. The greater the deterioration in dementia præcox, the smaller is the deflection. The manic-depressive group shows less uniformity and gives a smaller deflection than normal subjects. There is some indication that depressed subjects display greater affectivity than manic subjects. Patients with dementia præcox and paretic patients treated with malaria show an increase in magnitude of deflections if they display unmistakable clinical signs of improvement.

G. W. T. H. FLEMING.

Certain Personality Problems in Relation to Mental Illness, with Special Reference to Suicide and Homicide. (*Brit. Journ. of Med. Psych., May*, 1929.) *Gordon, R. G.*

The author considers that suicide and homicide are closely related, and both represent a failure in the personal adjustment to the social environment, the universe and reality. The apparently normal person of the potentially psychotic type may under special circumstances commit suicide or homicide, but people of the potentially psychoneurotic type do not commit suicide or homicide or become insane.

G. W. T. H. FLEMING.

The Social Significance of Mental Disease. (*Arch. of Neur. and Psychiat., November*, 1929.) *White, W. A.*

The incidence of tuberculosis in schizoid states is three times as great as it is in paranoid, cycloid and epileptoid groups together. The schizoid has no ability to protect himself. In deaths due to intestinal disorders we find the cycloid group conspicuous by its absence, whilst once again the schizoid group is at the top. When we come to study the incidence of carcinoma and other malignant tumours, we find the paranoid and cycloid group most prominent. In streptococcal infections we find that the paranoid and cycloid

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supply the majority. In deaths from circulatory disturbances the paranoid group leads the way, with the cycloid group second. White correlates these findings of Freeman with the psychoses and finds that when there is tendency to compensation in the psychosis there is the same tendency in the physical disease.

G. W. T. H. FLEMING.

Neurogenic and Psychogenic Disorders of the Alimentary Canal. (*Journ. of Nerv. and Ment. Dis., August*, 1928.) *Kantor, J. L.*

The author, viewing neurogenic and psychogenic disorders of digestion from the viewpoint of a practising gastro-enterologist, comes to the following conclusions: An increasing number of cases formerly diagnosed as nervous dyspepsia are shown to be instances of actual organic disease of the digestive organs or of their nervous communications. The theory of autonomic imbalance occupies a prominent place in discussions of the ætiology of such important digestive disorders as peptic ulcer, cardiospasm, intussusception and congenital pyloric stenosis. Lesions of the spinal cord may produce visceral effects either directly by involving the preganglionic fibres at their point of origin, or else indirectly by affecting the suprasegmental neurons connecting with these pre-ganglionic fibres. Centres regulating the functions of the entire involuntary nervous system are now known to be located in the diencephalon. Lesions in this region occur frequently in epidemic encephalitis, dementia paralytica and dementia præcox. Psychic disorders of digestion are mediated through the emotions and through ideas causing conditioned reflexes. G. W. T. H. FLEMING.

An Interpretative Study of Involutional Depression. (*Amer. Journ. Psychiat., September*, 1928.) *Pearson, G. H. J.*

The author presents a study of four cases of depression: three of involutional melancholia, and one in the involutional period with a seventh attack of manic-depressive psychosis.

The technique of investigation is discussed and the cases are fully reported.

The article ends with a psychological comment.

WM. MCWILLIAM.

A Group of Benign Chronic Psychoses: Prolonged Manic Excitements. (*Amer. Journ. Psychiat., July*, 1929.) *Wertham, F. I.*

In the present study seven cases of prolonged manic excitement with durations of from five to eleven years are reported, with a statistical study of age, duration and frequency in 2,000 maniacal attacks.

Statistics are illustrated by means of what the author calls "frequency distribution polygons." In an excellent summary the author concludes that the study of the material reported and of scattered cases in the literature makes it possible to single out a distinct group of benign chronic manic excitement, which consists

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of infrequent cases with recurring acute maniacal attacks. There is an affinity to the pyknic body type, absence of depressive attacks and absence of pronounced signs of deterioration, and a possibility of recovery from the chronic attack.

WM. MCWILLIAM.

Brief Attacks of Manic-Depressive Depression. (*Arch. of Neur. and Psychiat., July*, 1929.) *Paskind, H. A.*

The author, from the records of 633 cases of recurrent attacks of manic-depressive depression, found 14% with a history of attacks lasting from a few hours to a few days. These attacks are sudden in appearance and disappearance and are apparently without cause. They may precede or succeed the more extended ones or they may occur alone. G. W. T. H. FLEMING.

Intermittent Confusional Crises Associated with Hepatic Colic; Operation; Cure. (*Riv. di Pat. Nerv. e. Ment., February*, 1929.) *Leanza, A.*

The author describes a case in a girl, æt. 23, who, after a severe emotional strain (the attempt of her brother to strangle his mother), developed icterus and a series of attacks of biliary colic, each of which was associated with the symptoms of a typical hallucinatory confusional state. A cholecystectomy was performed and the gall-bladder found to be very congested and with many adhesions. The operation was followed by the immediate disappearance of the morbid symptoms. G. W. T. H. FLEMING.

Prison Psychoses. (*Ann. di Neurol., July–August*, 1928.) *Mondio, E.*

The author studied 19 cases of prison psychoses. Of these 11 had hallucinatory psychoses, 3 dementia præcox, 2 maniacal states, 1 melancholic, 1 manic-depressive and 1 confusional insanity. He concludes that the enclosed space and segregation may either give rise to psychoses in predisposed individuals, or precipitate a latent psychosis. He emphasizes the necessity for the institution of a psychiatric service in all prisons.

G. W. T. H. FLEMING.

Epileptic Manifestations in the Group of Schizophrenic and Manic-Depressive Psychoses. (*Journ. of Nerv. and Ment. Dis., May*, 1929.) *Notkin, J.*

The author found epileptic manifestations of major and minor type in 8 cases, 3 manic-depressives, and 5 schizophrenics. He looks on this as rather rare, and thinks that the toxic approach of Urstein the acute brain swelling in katatonia and the severe toxic states at times seen in manic-depressive insanity may eventually help to explain the occurrence of convulsive seizures in these psychoses.

G. W. T. H. FLEMING.

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Mescaline Intoxication [*Meskalinrausch*]. (*Brit. Journ. of Med. Psych., May*, 1929.) *Buchanan, D. N.*

The author gives a short account of the case-histories of people who took mescal buttons deliberately to observe the effects. He compares the action of mescaline with that of similar drugs, discusses the general psychological effects, and adds a note on Lilliputian hallucinations. There is a striking similarity between the alteration in size of familiar objects which is observed in mescaline intoxication, and in the conditions which give rise to Lilliputian hallucinations. G. W. T. H. FLEMING.

A General Paralytic of 82 Years. (*Riv. di Pat. Nerv. e Ment., February*, 1929.) *Rizzo, C.*

Rizzo describes a case of undoubted general paralysis in an old man of 82 years. The loss of memory, etc., were first diagnosed as senile dementia, but subsequent examination of the blood and cerebro-spinal fluid showed that the case was one of general paralysis. G. W. T. H. FLEMING.

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4. Pathology.

The Nerve Supply of the Cerebral Blood-Vessels. (*Arch. of Neur. and Psychiat., August*, 1929.) *Hassin, G. B.*

The author tells us that the blood-vessels of the pia are rich in nerve-fibres, which may be single or run in bundles; they are mostly unmyelinated. The blood-vessels of the cerebral parenchyma as well as the pial capillaries are devoid of nerve-fibres. The pia dominates the cerebral circulation not only by supplying the blood-vessels, but also partly by controlling their activity.

G. W. T. H. FLEMING.

Experimental Lesions in the Hypothalamus of the Guinea-pig. (*Journ. of Nerv. and Ment. Dis., June*, 1929.) *Warner, F. J.*

The author, by means of a sharp needle, caused a lesion extending from the pre-optic area of the diencephalon to the anterior level of the ventro-medial hypothalamic nuclei posteriorly in adult guinea-pigs. The lesion involved both medial pre-optic nuclei, both anterior hypothalamic nuclei and the ventro-medial nuclei on both sides. The pathological changes consisted of a chronic inflammatory process with a degeneration of the small nerve-cells of the involved nuclei and their replacement by actively phagocytic gitter-cells. There was no involvement of the adjacent nuclei. There were no marked neurological symptoms.

G. W. T. H. FLEMING.

The Histology of Neuroglia Changes following Cerebral Trauma. (*Arch. of Neur. and Psychiat., November*, 1929.) *Linell, E. A.*

The neuroglial reaction to injury of the brain consists of a microglial reaction and a macroglial reaction. The microglial reaction has the following outstanding features: It consists in the

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transformation of microglia cells into compound granular corpuscles, which, when fully developed, are large, round, probably amœboid cells heavily loaded with lipoid. This change takes place rapidly, being well developed three days after the injury and reaching a maximum in six days. Its function is that of phagocytosis of damaged nerve-tissue, particularly myelin, and probably the transfer of this degenerating tissue to the blood-stream for disposal. It is a reaction of mesoblastic tissue. The macroglial reaction shows at the end of three days a slight hypertrophy of astrocytes in the area of the wound. At the end of six days this hypertrophy has become more marked surrounding an area of active microglial reaction. At the end of fourteen days a marked numerical increase of hypertrophied cells is seen, with definite arrangement of strong processes in a direction at right angles to the margin of the wound. The astrocyte processes have now reached the edge of the wound track. Twenty-one days after wounding the astrocyte reaction is at its height. Four weeks show the earlier stages of felting of the astrocyte processes in the long axis of the wound to form a scar-tissue of glial fibres. This glial felt-work has thickened considerably by the end of eight weeks and few cell-bodies are observable in this glial "mat." The purpose of the macroglial reaction is the formation of a protective scar.

G. W. T. H. Fleming.

Changes in the Interstitial Cells of the Brain with Morphine Intoxication. (*Arch. of Neur. and Psychiat., June*, 1929.) *Wolff, H. G., Reid, W. P., and Cobb, S.*

The authors investigated the action of morphine sulphate injections on groups of dogs. The oligodendroglia in all but the very mildly intoxicated animals showed degenerative swelling. Definite swelling of the oligodendroglia occurred in animals in which the microglia and astrocytes appeared normal. The alterations in the oligodendroglia are similar to those caused by other intoxicants. The degree of degenerative swelling of the oligodendroglia is chiefly dependent on the total dosage and duration of administration of the drug. If the degeneration is not too advanced, complete structural recovery may occur. There is a great discrepancy between the first recordable change in function and the first visible change in structure of the central nervous system.

G. W. T. H. Fleming.

Alteration in the Microglia and Neuroglia in the Basal Ganglia in General Paralysis. (*Riv. di Pat. Nerv. e Ment., November*, 1928.) *Bolsi, D.*

The author studied 8 cases of general paralysis. He found both microglia and macroglia affected in the grey matter at the base of the brain. He thinks that the varying intensity and location of the changes should encourage research into the relation between the changes in the basal ganglia and the variation in the clinical picture, particularly the affective component which contributes a large share to the mental symptoms. G. W. T. H. Fleming.

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Histo-Pathological Changes following Malarial Treatment of General Paralysis. (*Brain, December*, 1928.) *Wilson, R. B.*

In this article Dr. Wilson describes:

(*a*) Thirty-eight cases which have run a clinical course fairly typical of paresis and have been treated with malaria, divided into groups, thus:

(1)	7 cases,	death during treatment.	
(2)	6 cases,	,, 4–14 days after treatment.	
(3)	3 ,,	,, 3–6 weeks	,,
(4)	5 ,,	,, 3–5 months	,,
(5)	4 ,,	,, 6–9 ,,	,,
(6)	10 ,,	,, 1–2½ years	,,
(7)	3 ,,	,, 3–5 ,,	,,

(*b*) 1 case dying during a remission.

(*c*) 16 cases dying in period of exacerbation—that is, during treatment and up to 3–6 weeks after treatment.

Histological changes in the brains of all these groups are described, together with photographic reproductions of sections of the cortex.

WM. MCWILLIAM.

Primary Pituitary Tumours. (*Arch. of Neur. and Psychiat., September*, 1929.) *Puestow, C. B.*

Of 50 cases of primary pituitary tumours studied by the author, 62% were adenomata, 14% cysts, 16% carcinomata, and the remainder adamantinoma, psammoma, glioma and gumma. Growth stimulation was only found in the adenomata. Amenorrhœa was found in 13 out of 14 cases of adenoma and in only 2 of 6 cases of malignant lesions.

G. W. T. H. FLEMING.

A Form of Myasthenia Gravis with Changes in the Central Nervous System. (*Brain, April*, 1929.) *McAlpine, D.*

The author describes in detail the histological findings. Outside the nervous system only the thymus showed any change—a simple hypertrophy. The muscles were perfectly normal. The cerebral cortex, subcortical white matter and basal ganglia were normal apart from extensive mucocytic degeneration which especially involved the white matter. A few of the cells of the third nerve nucleus on each side showed slight changes. Many of the vessels of the spinal cord were markedly infiltrated with round-cells. There was a slight degree of gliosis, especially around the anterior horns. Mucocytes were more numerous in the cord than elsewhere. The author discusses the formation of mucocytes, and considers that the large mucocytes may turn out to be of importance pathologically. There appears to be a form of myasthenia gravis associated with inflammatory changes in the central nervous system, the cause of which is at present problematical.

G. W. T. H. FLEMING.

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On Myasthenia Gravis. (*Journ. of Nerv. and Ment. Dis., May,* 1929.) *Querido, A.*

The author carried out a careful histological examination in a case of myasthenia gravis. Changes were found in the striated muscles, liver, lung and kidney. These changes consisted of peri-vascular foci containing leucocytes, lymphocytes, plasmatic cells, fibroblasts and ripe fibrous tissue, with traces of hæmorrhage; the walls of the vessel running through such foci are infiltrated with the same type of cells. The author thinks there is evidence that myasthenia gravis is a general vascular disease, to be defined pathologically as a peri-vasculitis chronica proliferans.

G. W. T. H. FLEMING.

The Histogenesis of Von Recklinghausen's Disease. (*Arch. of Neur. and Psychiat., July,* 1929.) *Gray, J. H.*

The author studied two cases in which there occurred fibrosarcomatous changes. There was no relationship between the cells of the sheath of Schwann and the cells comprising the tumours. The neoplastic tissue had its origin in the perineurium, which appears to be derived from the mesoderm. G. W. T. H. FLEMING.

A Contribution to the Pathological Anatomy of Chronic Chorea. (*Riv. di Pat. Nerv. e Ment., May–June,* 1928.) *Bellavitis, C.*

The author concludes that Huntington's chorea and chronic chorea following on an acute chorea seem to be different diseases when viewed from an anatomical as well as a clinical aspect. The first presents a condition of the nervous system originally more degenerative and approaching closer to systemic disease of the nervous system, while the second is distributed to all parts of the cerebro-spinal axis, and is better understood as being from the beginning an inflammatory process.

Even now it is not safe to postulate a purely striatal origin for all choreas; it is better to follow a less restricted theory and admit the possibility of cortical, cerebellar and thalamic lesions playing a part. In Huntington's chorea in particular we ought to admit both striatal and fronto-Rolandic lesions. Bellavitis thinks we ought to pay particular attention to the liver in the various choreas.

G. W. T. H. FLEMING.

The Pathology of Measles Encephalo-Myelitis. (*Brain, July,* 1929.) *Greenfield, J. G.*

The author describes the clinical picture of measles encephalomyelitis, and emphasizes the importance in the diagnosis of the spinal type of temporary paraplegia with loss of sphincter control and incomplete or dissociated anæsthesia. The typical measles myelitis resembles no other form of myelitis except that sometimes seen in the early stages of disseminated sclerosis, and the myelitis which sometimes comes on during a course of antirabic treatment or during convalescence from some of the other acute fevers. When

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recovery occurs, it is often remarkably complete. The encephalomyelitis of measles is characterized by three main types of pathological change: (1) Diffuse congestion of the brain, especially of the white matter, sometimes with petechial hæmorrhages; (2) a discrete perivascular infiltration with round-cells (this is often absent); (3) small perivascular zones of demyelination. This last is the most characteristic change. No clinical or pathological distinction can be drawn between the encephalo-myelitis following measles and that which may follow vaccination and smallpox. Greenfield thinks that these diseases are caused by an unknown virus which spreads in epidemic waves, but produces no disease unless stimulated to activity by the exanthem.

G. W. T. H. FLEMING.

Encephalitis Periaxialis Diffusa. (*Arch. of Neur. and Psychiat., June*, 1929.) *Shelden, W. D., Doyle, J. B., and Kernohan, J. W.*

The authors describe two cases with necropsy reports. In neither case could the lesion be placed on a vascular basis, the areas of degeneration not corresponding to the vascular distribution. The cortex was generally well preserved. The axis cylinders were not preserved in the middle of the degenerated area, but were present only at short distances from the edge of the lesion. They disappeared almost as soon as the myelin sheaths. The oligodendroglia reaction was the earliest response to injury; the astrocytes were more resistant, were hypertrophied and hyperplastic with long processes. The authors found mucus in the scavenger cells most abundantly in the degenerated area and in the perivascular spaces. Free mucus was not observed. There was little evidence of an inflammatory process. Perivascular cuffing was limited to the edge of the lesion and to a short distance only in the normal tissue.

G. W. T. H. FLEMING.

Ætiology of Epidemic Encephalitis. (*Arch. of Neur. and Psychiat., October*, 1929.) *Levaditi, C.*

The encephalitic varieties of the virus of herpes possess affinities different from those of the herpetic strains so-called. Those human subjects attacked by epidemic encephalitis appear to offer a special receptivity to the virus, which in its turn appears to have a special affinity for the neuraxis. Levaditi considers that the difficulty in inoculating animals with the virus is due to the "auto-sterilizability" of the virus. Possibly during an infection with neurotropic virus death may occur at a moment when the virus has been completely destroyed. In post-vaccinal encephalitis also, as in certain cases of herpes or of experimental rabies, there is an infective process affecting the neuraxis and coming under the heading of fatal auto-sterilizable neuro-infections. Jonescu-Mihaesti found that certain Roumanian poliomyelitic strains are capable of producing fatal poliomyelitis in monkeys, and that the animals die at a stage when their neuraxis has become incapable of producing the

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disease in other fresh Simians, although the spinal cord of such monkeys displays characteristic and intense poliomyelitic alterations. The frequent avirulence of the neuraxis of patients who have died following an acute attack of epidemic encephalitis may therefore be due not only to peculiarities inherent in the ætiological agent of the disease, but to the fact that the defensive reactions of the neuraxis succeed in neutralizing the virus, or in rarefying it to a point at which the infection ceases to become transmissible to the most receptive laboratory animals. G. W. T. H. FLEMING.

Cholesterinuria in Dementia Præcox. (*Ann. di Neurol., March–April*, 1928.) *Pinto, A.*

In dementia præcox cholesterol is sometimes found in the urine. This occasional cholesterinuria is always due to some serious co-existing organic process. The functional and eventually structural modification of the nervous system in dementia præcox has no direct influence on the metabolism of the cholesterol molecule. In ten cases examined by Pinto the reaction for cholesterol was uniformly negative. G. W. T. H. FLEMING.

The Sedimentation Test. (*Amer. Journ. Psychiat., July*, 1928.) *Goldwyn, J.*

In this article the author recommends the erythrocyte sedimentation reaction as a laboratory test to be used as a routine procedure in psychiatric hospitals. The history of, and literature on the reaction are dealt with at some length, as is its technique. Illustrative cases are cited, showing the variations in the reaction, which the author concludes is such an "efficacious and reliable detector of many pathological conditions" as to warrant its routine use.

WM. MCWILLIAM.

Some Tentative Conclusions on the Boltz Test in General Paralysis of the Insane. (*Journ. of Neur. and Psycho-path., July*, 1928.) *Nicole, J. E.*

The author's observations were based on a series of 346 Boltz tests performed on 267 patients, of whom 108 were cases of general paralysis.

He concludes that the test is positive in the cerebro-spinal fluid, almost exclusively in general paralysis, and that it tends to change after malarial treatment, but not so frequently or so rapidly as the globulin test. WM. MCWILLIAM.

The Potassium Bichromate Reaction in the Cerebro-spinal Fluid. (*Riv. di Neurol., October*, 1928.) *Vizioli, F.*

The bichromate of potash reaction in the spinal fluid was first described by Taccone in 1925. It consists in adding slowly 3–4 c.c. of a 5% solution of bichromate of potash containing a few drops of trichloracetic acid to ½–1 c.c. of spinal fluid, taking care that the two liquids do not mix. At the level of contact of the two liquids there appears an opaque yellow ring, due to the coagulation of

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the albumen by the trichloracetic acid. In the normal fluid the ring enlarges after a few minutes, but does not diffuse through the fluid, becoming more attenuated until it is dispersed in the tiniest flakes and disappears, colouring all the fluid a yellow colour. In pathological cases the opaque ring remains compact and forms a suspended skein from the wall. Taccone distinguishes two types of reaction—a meningitic type characterized by the persistence of the dense opaque ring, and an encephalitic type characterized by the formation of a whitish ring. Vizioli found the reaction invariably negative in non-organic cases, and even in some cases of epilepsy, of post-encephalitic Parkinsonianism, of dementia præcox, of acquired hydrocephalus and of progressive muscular atrophy. The author obtained the meningitic type of reaction in almost all cases of general paralysis, in some cases of tabes, in three cases of spinal syphilis, also in a case of acute epidemic encephalitis, in one of trigeminal neuralgia, in a case of syphilitic cerebral arteritis and in a case of paraplegia.

The encephalitic type of reaction was found in a case of epilepsy, in some cases of post-encephalitic Parkinsonism, in a case of syphilitic pseudo-bulbar paralysis, in some cases of tabes, in all cases of general paralysis in which the amount of albumen was less than 0·1%, in four cases of katatonic dementia præcox and in all cases of disseminate sclerosis examined, of which five showed an otherwise normal fluid. G. W. T. H. Fleming.

The Bi-coloured Guaiac Test. (*Brain, July*, 1929.) *de Thurzo, E.*

The author points out the value of diagnostic tests of the spinal fluid. Mras and Landsteiner picked out by the colloidal tests future subjects of general paralysis. De Thurzo himself picked out by the colloidal reactions in the spinal fluid two cases which two and a half years later showed well-marked clinical signs of general paralysis. He describes a new colloidal test using tincture of guaiac resin, naphthol green and brilliant fuchsin. In general paralysis in the first four to six tubes of the series there is complete deviation of the colour to green. In tabes dorsalis and in syphilitic myelitis the greatest deviation occurs mostly in tubes 2, 3 and 4. In other nervous diseases the results were negative.

G. W. T. H. Fleming.

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5. Treatment.

Unattended Wards [*Pflegerlose Abteilungen*]. (*Psych.-Neur. Wochenschr., No.* 45, *November* 10, 1928.) *Mönkemöller.*

Dr. Mönkemöller gives further details of his system of open wards without continuous supervision (*vide Journ. Ment. Sci.*, 1928, p. 813). He deals at length with a number of criticisms, and points out the advantages of the system as follows: It provides the greatest measure of freedom possible for chronic, harmless patients; it encourages in them a sense of responsibility and self-confidence

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and prevents them from becoming institutionalized; in more recent cases it can be used to test patients' fitness for discharge. The author pays a tribute to the efficient way in which the "senior patients" who have been placed in charge of the domestic arrangements of these wards have carried out their duties.

A. WALK.

"Open Care" of the Insane at the Pfafferode State Hospital [Die offene Irrenfürsorge an der Landesheilanstalt Pfafferode bei Mühlhausen i.-Thüringen]. (*Psych.-Neur. Wochenschr., No.* 52, *December* 29, 1928.) *Tietze and Schramm.*

Extra-mural activities in connection with this hospital were begun in 1927 with the establishment, in the neighbouring town of Mühlhausen, of a consultation centre. Three classes of patients were dealt with: (1) Those on prolonged leave from hospital; (2) patients granted full discharge at a comparatively early stage of their illness, on the understanding that they would attend at the centre; (3) voluntary patients. In 1928 a "follow-up" department was started, patients being visited in their homes, where information is obtained as to their surroundings and treatment, and advice is given on all matters concerning their mental health. It has been found that patients appreciate and look forward to these visits, while the consultation centre has been largely attended. The system has enabled a much larger number of patients to be discharged or allowed prolonged leave, and it is now being extended to other districts served by the same hospital. The placing of patients in family care has also been initiated. The extra-mural work is carried out alternately by two medical officers of the hospital, so as to maintain a close connection between the institution and the outside departments; there is also a small nursing and secretarial staff. A. WALK.

The Use of Insulin for Patients who Refuse Food [Insulin bei nahrungverweigernden Geisteskranken]. (*Psych.-Neur. Wochenschr., No.* 47, *November* 24, 1928.) *Becker.*

Injections of insulin were used to arouse a desire for carbohydrates in four cases of refusal of food in katatonic and paranoid patients. The patient should be allowed to starve for a day or two before the treatment; doses of up to 100 units may be given, some glucose solution being kept at hand for use in case of hypoglycæmic collapse. The results were excellent in one case, and fair results were obtained in the others. A. WALK.

Treatment of Manic-Depressive Insanity by Somnifen [Die Behandlung der manisch-depressiven Psychose mit Somnifen]. (*Psych.-Neur. Wochenschr., No.* 52, *December* 29, 1928.) *Beijerman, W.*

Somnifen appears to have a specific action in all forms of manic-depressive insanity; attacks of mania or melancholia can nearly always be cut short, though the treatment has no effect on the

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liability to recurrence. A strict technique must be followed. The dose must be settled for each patient individually; a usual commencing dose is 30–40 minims twice daily, rising in 3 to 4 days to 200 minims a day, which dose is maintained for 14 days. It may be given by the mouth or intramuscularly, and the first dose is best given at night; the patient is kept in a quiet, darkened room. Sleep is not always induced, but good results are obtained even when the patient has remained agitated throughout the course of treatment. Some show symptoms resembling those of alcoholic intoxication. During the treatment the patient must be under continuous supervision. A cardiac tonic must be given, constipation treated, and the bladder catheterized, if necessary, for retention. The author carries out suggestion treatment while the patient is under the influence of the somnifen. Frequently improvement does not commence until a few days after the termination of the treatment.

A. WALK.

An Apparatus for the Induction of Muscular Relaxation and Sleep. (*Arch. of Neur. and Psychiat., October*, 1929.) *Rosett, J.*

The author describes an apparatus for enclosing the whole body, and passing a wave of encircling pressure along the limbs and the body in the direction of the venous flow. The effect of this after a short time is to induce a condition of muscular relaxation and finally sleep. Rosett is not prepared to say how a wave of encircling pressure can cause such marked nerve inhibition. He found some cases of hypertension much benefited by the treatment.

G. W. T. H. FLEMING.

Hyperpyrexia Produced by Baths. (*Arch. of Neur. and Psychiat., October*, 1929.) *Mehrtens, H. G., and Pouppirt, P. S.*

The authors utilized prolonged hot baths in the treatment of various neuro-psychiatric conditions. Generally speaking between 98° and 102° F. the patients were calm and co-operative, between 102° and 103° F. they usually showed signs of restlessness and anxiety, and made efforts to elevate the limbs out of the water; from 103°–105° F. they were quieter and rather apathetic; from 105°–107° F. mild confusion frequently occurred. The Wassermann reaction of the spinal fluid was frequenlty diminished in intensity, and the colloidal gold reaction often changed from a paretic to a tabetic type. The permeability of the meninges was increased by fever produced by baths. In order to affect the permeability quotient it was necessary for the fever to be over 103° F., to be continued for at least thirty minutes and to be repeated on at least five successive days. It is necessary to raise the mouth temperature to at least 104° F., sometimes as high as 107° F., and to maintain it for one hour in order to obtain clinical results.

Most patients gain in weight and show an increase in hæmoglobin and reticulocytes. The results in neuro-syphilis compare quite well with those obtained by malaria therapy. Frequent amelioration of individual symptoms was obtained in Parkinson's syndrome

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following encephalitis, as well as in combined sclerosis. Pain resulting from minor disturbances in muscle, nerve and joints proved especially amenable to treatment by heat. No results were obtained in amyotrophic lateral sclerosis.

G. W. T. H. FLEMING.

Malaria as a Therapeutic Agent for Paresis. (*Arch. of Neur. and Psychiat., October*, 1929.) *De Asis, C.*

Of 101 selected cases treated by the author 33% improved sufficiently to be sent home. Practically all patients after treatment showed a normal cell-count in the spinal fluid. There was practically no change in the globulin in the spinal fluid, but 16% of the Wassermann reactions became negative. In the blood 20% of the Wassermann reactions became negative. The colloidal gold curve is only slightly if ever affected. The mortality due to inoculated malaria was 8%. G. W. T. H. FLEMING.

Recent Methods in the Treatment of General Paralysis. (*Amer. Journ. Psychiat., January*, 1929.) *Bunker, H. A.*

Dr. Bunker reviews the extensive literature on tryparsamide and malarial therapy in general paralysis, collating 542 cases treated with tryparsamide and 2,460 treated with malaria. Of the former he finds a remission rate of about 35%, and the latter of about 27%.

To all psychiatrists this summary will be of interest, as the cases have been culled from a very wide field. WM. MCWILLIAM.

The Treatment of General Paresis. (*Irish Journ. Med. Sci., June*, 1929.) *Bewley, G.*

In his article Dr. Bewley discusses the history and antecedents of the modern treatment of general paresis. He gives notes of four cases he has treated by malarial therapy.

WM. MCWILLIAM.

Dementia Paralytica; Therapeutic Measures and Results. (*Journ. of Neur. and Psychopath., July*, 1929.) *Pool, A.*

Dr. Pool here recounts the therapeutic measures employed in the treatment of dementia paralytica at the County Mental Hospital, Rainhill, since June, 1923, when malarial infection was begun, to be augmented in March, 1927, by tryparsamide.

An analysis of the results is given at some length and good use is made of the tabular method.

The author in concluding expresses the opinion that malaria alone is as effective as the combined therapy (with tryparsamide) in producing remission of mental symptoms and changes in serological reactions, and that tryparsamide serves as an important adjunct, in that it acts as a general physical tonic.

WM. MCWILLIAM.

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Brief Report of the Use of Sodium Luminal in Mental and Nervous Diseases. (*Amer. Journ. Psychiat., January*, 1929.) *Smith, L. H.*

Ninety cases were studied in regard to the efficiency of sodium luminal as a sedative and soporific. The drug was given orally in tablet form, and in addition small doses of sodium bicarbonate to prevent gastric irritation when necessary.

It was found to be efficacious in those cases which showed agitation, anxiety, various degrees of over-activity or extreme insomnia. It was less useful in cases with marked affective changes. The author's findings are fully set out, with details of dosage and the contra-indications. WM. MCWILLIAM.

Crafts and Personality in the Treatment of Mental Disorders. (*Occup. Therap. and Rehabil., December*, 1928.) *Gundersen, P. G.*

The author in this article stresses the choice of a craft in the treatment of a case of mental disorder to suit the personality of the patient. A craft in such cases cannot be prescribed with the precision of a drug or other specific remedy. Every case is a problem in itself and must be dealt with accordingly.

WM. MCWILLIAM.

Linoleum Printing in a Mental Hospital. (*Occup. Therap. and Rehabil., February*, 1929.) *Humphrey, E. F.*

The technique of this craft is simply and fully described in this article. The necessaries for carrying out the work are inexpensive, and many can easily be evolved with a little ingenuity.

WM. MCWILLIAM.

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Part IV.—Notes and News.

THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

Quarterly Meeting.

The usual Quarterly Meeting of the Association was held at the British Medical Association House, 19B, Tavistock Square, London, W.C. 1, on Wednesday, November 6, 1929, under the Presidency of Nathan Raw, *C.M.G.*, M.D., M.R.C.P., F.R.S.E.

(1) Minutes.

The minutes of the last meeting, having already been printed and circulated, were taken as read and were approved and signed by the President.

(2) Obituary.

The President said the next sad business was to refer to the members who, since the last meeting, had passed away. In a great organization such as this, it must of course be expected that there would be periodic losses by death; and to-day the loss had to be deplored of Dr. Patrick O'Doherty, who died on July 19, Dr. Fletcher Beach, who died on August 18, and Prof. William Bevan Lewis, who died on October 14. An additional death had just become known, that of Dr. C. Costello, on May 27. Two of those he mentioned, namely Prof. Bevan Lewis and Dr. Fletcher Beach, had been Presidents of the Association. He was sure that all present would wish to express great regret at the loss of these members, and to offer condolences to their relatives in their great affliction. He had already, as President, written letters to the relatives, and had received very grateful letters in return. This meeting, however, would like to express more fully the feelings entertained towards their departed colleagues, and he would ask to speak those who knew the deceased members particularly well.

Dr. Patrick O'Doherty.

Dr. W. Starkey: I regret that no one is present to-day who knew Dr. O'Doherty better than I did, but I first had the pleasure of meeting him as a young medical officer, when I was assistant to Dr. M. J. Nolan, of Downpatrick, many years ago. I had the pleasure of renewing this acquaintance at the Association's Annual Meeting, in 1924, at Belfast. The news of the death of one who had an extremely vivid and charming personality came as a great shock to me. He has left a host of friends to mourn his early decease.

Dr. Fletcher Beach.

Dr. W. F. Menzies: Dr. Fletcher Beach was not very well known to the younger members of the Association. Unfortunately he had been in poor health from hemiplegia for the last ten years or so. Those who knew him before that illness could never forget what a bright and cheerful personality he had. Rarely did one come across a man who would go so much out of his way to do a kindness for the younger people as would Dr. Fletcher Beach. When he (the speaker) joined the Association Dr. Fletcher Beach was General Secretary and every candidate who came up for election was cordially introduced to the "big guns" of the Association of the time, and everything would be done to make life in the Association pleasant. Two other occasions are especially worthy of recollection. When the Association met at Darenth they had a most pleasant time and an unusually fine demonstration of cases, especially the mysterious type called "hypertrophic idiocy." The other time was when he (the speaker) was on the short list for Darenth when Dr. Fletcher Beach was resigning. He took the candidates round the whole place and explained

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the nature of the work fully, afterwards entertaining them at his own house. He said he did not like to think that whoever was appointed should come as a stranger. It was a sad occasion for the Association, and for those who knew him, when they heard that he was struck with hemiplegia and that his career was practically ended.

Prof. William Bevan Lewis.

Dr. DOUGLAS MCRAE: I am sorry there is not present to-day someone, say another old assistant medical officer on the staff of Wakefield Mental Hospital, to speak more ably in his memory. I had the good fortune to be assistant to Prof. Bevan Lewis over thirty years ago, and it is inconceivable to me that any junior could have been placed in more favourable conditions for learning both clinical psychiatry and laboratory methods of investigation into brain disease. Bevan Lewis was a man who devoted every moment of time he could spare from his hospital and his patients to research. He seemed to be at his best when he had half a dozen of us round him investigating cases, both in the wards and in the *post-mortem* room. Many a time we juniors used to think it was a great hardship that we should be required to forsake a tennis party or a cricket match to attend or assist at a *post-mortem* examination, but it is only in after life that one is able to appreciate that the sacrifice was amply repaid by the knowledge gained from a man of such world-wide reputation in psychological medicine. Clinically he was extremely thorough, and he expected thorough work from his assistants. He was also a fine administrator, and kept his staff in a high state of efficiency. Yet, with it all, I never knew a man who was so innocent in regard to the possibilities of human intrigue or underhand dealings. No more modest man ever lived than Bevan Lewis. He shrank from publicity or notoriety, and resented deeply anything of this nature in connection with his work. I stand here to-day feeling—and I know it is so with every assistant who served at Wakefield—that I owe a great debt of gratitude to Prof. Bevan Lewis for all that he taught us and the example he set.

In memory of the deceased members, those present stood for a brief time in silence.

(3) REPORT OF THE COUNCIL.

The PRESIDENT said that one of the matters the Council had discussed was the attacks on the Lunacy Acts and on the treatment of patients in mental hospitals published in recent issues of *Pearson's Weekly* and *John Bull*, and arising out of interviews with a Dr. Dutton, who, as far as the speaker knew, was unknown in the psychiatric world. The Council of the Association took a very serious view of the matter, especially of the illustrated article in the former paper, which made charges and insinuations proved by the Royal Commission to be groundless, and contained grave misstatements of the provisions of the Lunacy Acts calculated to raise the apprehension and anxiety of the friends of the patients. The Council decided to send a letter of strong protest to the Editor of *Pearson's Weekly*, the protest to include the illustration, which was a disgraceful affair. He was sure the meeting would approve of that. (Hear, hear.)

(4) ELECTION OF ORDINARY MEMBERS.

The PRESIDENT nominated Dr. W. Starkey and Dr. E. Barton White scrutineers for the ballot.

The following candidates were unanimously elected ordinary members of the Association:

LUFF, MARY CONSTANCE, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Research Worker under Medical Research Council; Clinical Assistant, Tavistock Clinic: 38, Langham Street, London, W. 1.
Proposed by Drs. Mildred Creak, J. S. Harris and Thos. Tennant.

WEBER, HILDA MARION, B.Sc., M.B., B.S.Lond., Clinical Assistant, London Clinic of Psycho-Analysis: 6, Taviton Street, London, W.C. 1.
Proposed by Drs. M. E. Franklin, R. Worth and J. Ernest Nicole.

HOLMES, ERIC GORDON, M.A., M.B., B.Ch.Camb., Assistant to the Downing Professor of Medicine, Examiner in Pharmacology, Cambridge: Pharmacological Laboratory, Cambridge.
Proposed by Drs. J. R. Lord, W. F. Menzies and F. L. Golla.

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SHILVOCK, WILLIAM HENRY, B.Sc., M.B.,Ch.B. Birm., Assistant Medical Officer, Rubery Hill Mental Hospital, Birmingham.
Proposed by Drs. T. C. Graves, F. A. Pickworth and Elizabeth T. Selkirk.

HEXT, CATHERINE MARY, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Holloway Sanatorium, Virginia Water.
Proposed by Drs. H. Devine, J. G. Hamilton and R. Worth.

PETERS, GORDON FRANK, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Horton Mental Hospital, Epsom.
Proposed by Drs. W. D. Nicol, John J. Laws and Dorothy P. Hytch.

(5) PAPER.—**"Some Experiments with Suggestion and Association Tests in the Feeble-minded,"** by Dr. T. SAXTY GOOD (*vide* p. 43).

The PRESIDENT said the Association was much indebted to Dr. Good for this original and very interesting paper. It would be recognized that it was a kind of paper which formed valuable reading, but was difficult to discuss.

(6) PAPER.—**"Bacillus Acidophilus in Mental Patients, with Notes on the Ancillary Flora,"** by Dr. GEOFFREY SHERA (*vide p.* 56).

The PRESIDENT said this subject had an immensely important bearing on the toxic theory of causation of mental disorder, and this paper was full of original thought, and represented a very great deal of research work. At the last meeting there was read a similar contribution embodying much research by Dr. Ford Robertson, of St. Andrew's Mental Hospital, Northampton. Such papers were of immense value in elucidating the pathology of mental disorders, and members, he was sure, felt grateful to Dr. Shera for having added so much to their knowledge on the subject.

Dr. B. H. SHAW said he would like to hear from Dr. Shera, in his reply, what procedure he adopted in regard to the examination of fæces. Did he, for instance, give a purgative prior to taking fæces for examination? And how did he propose to feed patients, or to establish the acidophilus culture in the intestine? Many years ago the speaker went into this matter, following Metchnikoff's ideas, and after many attempts to eliminate the coliform bacilli in patients, he at length arrived at a procedure, which was, however, very unpleasant to the patient. Still, it seemed to be the only effective one. He made the patient take half a litre of milk daily containing a pure culture of the acidophilus; but as he could not make this diet palatable he had to desist after a time. It was a fresh culture, put up the night before. It involved a lot of labour in the wards. The abnormal coliforms seemed to be reduced, but he did not notice much improvement in the general state of the patients. He would be glad of suggestions as to how to carry out treatment on these lines to the best advantage.

Major F. H. STEWART (Brentwood): I wish to congratulate Dr. Shera on his extremely interesting paper, which forms an important addition to our knowledge of intestinal toxæmia. Intestinal toxæmia is a subject which has its ups and downs in the interest of our profession—to such an extent indeed as to be looked upon with some suspicion. We find that research workers take it up, carry out one or two inquiries, and then drop it; one can think of many names from Metchnikoff onward; but the subject nevertheless keeps coming up again, and bit by bit we have additions, such as the present, to the facts known. We may summarize our present conception of the matter somewhat as follows: Owing to some change in the conditions of life in the intestine the bacterial flora is altered, the acidophilus group is reduced in numbers, while the coliforms are increased, and unusual types such as paracolon and Morgan's bacillus appear in varying proportions. As a consequence the contents of the colon become alkaline, and such substances as phenol, indole, skatole and histamine are produced in increasing quantities. At the same time the coliform bacteria spread and migrate up the small intestine to regions where they find a mixture of amino-acids, glucose and glycerin in the chyme. Here they form the poisonous bases histamine, tyramine and indolethylamine, which are readily absorbed in an active form from the small intestine, although not from the colon.

The theory that mental disease may be caused by this condition has again come into prominence, largely through the work of Italian psychiatrists such as Buscaino and Scheiner. It has been criticized on the following grounds: (1) That poisonous

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bases and other decomposition products are detoxicated immediately after absorption into the body and therefore can produce no effect. (2) That the symptoms of mental disease do not correspond with the pharmacological action of the bases. But (1) it has been shown by Meakins and Harington that histamine introduced into the small intestine of experimental cats causes a marked fall of blood-pressure, and consequently must have been absorbed in an active state, while Dale and Laidlaw found that the detoxicating power of the liver was exhausted by a dose of 10 mgrm. of this substance. Harvey has caused arterio-sclerosis in rabbits by the prolonged administration of tyramine. The very process of detoxication may be harmful, and it is hardly credible that an individual can deal for a long period with excessive quantities of substances which call for detoxication without ill-effects. (2) That the symptoms of mental disease do not correspond with the pharmacological action of the poisonous bases: Now even granted that this is so, we can be assured that the action of these substances in the complex world of the human body and mind may be very different from their action on an isolated organ, or even on an entire experimental animal. Take histamine: if it is introduced into the bowel there follows (i) a fall of blood-pressure, (ii) a recovery due to the mobilization of adrenaline, and (iii) a prolonged slow fall from adrenaline exhaustion, so that the symptoms of slow histamine poisoning in man would be those of adrenaline exhaustion, or perhaps in time of adrenaline over-production. It would take a courageous man to assert that neither of these is to be found in mental disease.

It may, however, well be asked, what positive reasons have we for asserting an association between mental disease and intestinal toxæmia? There is firstly the universal and unanimous clinical testimony, which is so strong that it becomes the duty of the laboratory not to prove the incontrovertible, but to interpret what intestinal toxæmia really means. Among the laboratory findings we then have the observed increase of coliforms in mental patients (first recorded by Dr. E. Goodall), the appearance in quantity of abnormal coliform types, many of which specialize in phenol production and the decarboxylation of amino-acids, the decrease in acidophilus, and in the urine the great increase of phenols and similar end-products of bacterial decomposition.

We must, however, recognize that intestinal toxæmia may be only a symptom and not a primary cause of mental disease.

Dr. W. F. MENZIES said that in listening to this account of very painstaking work by Dr. Shera one felt some disappointment that nothing was said about the mental condition of the patients who were treated in this way. It would have been interesting to hear whether Dr. Shera took the recent acute toxæmic cases and eliminated the chronic. Only the more senior members of the specialty would remember the excitement which was caused in the mental hospital world by the researches of Metchnikoff, and the statements concerning the *bacillus Bulgarius*. At that time there were no laboratories at Rainhill Asylum and many other places, though there was a good one at Wakefield. Dr. Wiglesworth, who was the speaker's chief, was greatly interested in the subject, and he gave many of the patients plenty of sour milk. But when subjected to what might be called the "acid test" they did not, after some months of the treatment, show any difference mentally.

Dr. G. W. T. H. FLEMING said there seemed to be some tendency in this country to belittle the work of Pighini, of Italy. It was stated that histamine was in the wall of the intestine, and should it get through, it would be close to the liver. Two American workers, five years ago, showed that the liver had a very small power of detoxicating histamine. There was a good deal of work yet to be done on those lines.

Dr. SHERA, in reply, said he felt gratified that his paper should have given rise to an interesting discussion.

Dr. Shaw had made reference to the method pursued of examining the fæces. In reply, his method was to ask for a loose motion. If the motions of the patient were already loose, it was all right. If the patient was constipated, he was given a saline purge over-night. But with the glucose broth method he was indifferent to the type of stools, because if an organism was present this method would reveal it. In this paper he had been concerned only with the acidophilus bacillus, not with any abnormal coliforms found, which were Dr. Stewart's particular line. He, the speaker, did not claim that acidophilus therapy would necessarily eliminate

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the abnormal coliforms, but he did maintain that wherever there was a patient who had insufficient acidophilus, or none at all, it was a sound line of treatment to try to re-establish the bacillus; it was only going back to Nature. The newly-born infant had nothing but the pure acidophilus in its intestine, and if it was not there it ought to be.

There was, however, another way of eliminating the coliforms, which he had learned only that afternoon from Dr. D. Embleton, bacteriologist to University College Hospital. That was by giving anti-virus by the mouth. An autogenous anti-virus was made from the bacillus—it was a ten-day culture in broth, a particular bacillus filtered through a bacterial filter—he believed Dr. Embleton used a Seitz filter. Increasing doses of this anti-virus were given by the mouth, and the results were said to be excellent.

With regard to tyrosine, the fact that it caused, in experimental work, arterio-sclerosis was very interesting; for when one met with a large amount of chronic nephritis and arterio-sclerosis *post-mortem* in mental hospitals, one wondered where it came from. Possibly this had some bearing on that point.

As to histamine, he did not know whether Dr. Stewart noticed the letter in the *British Medical Journal* by Mr. Voge, of Edinburgh, as to the testing of urine for histamine in cases of suspected pregnancy. The speaker had tried a dozen specimens, and the test seemed to work well. That might indicate a line for the detection of the absorption of these abnormal products.

The cases were not classified in any way; the tables showed that the cases were taken at random, as they came in.

Sufficient progress had not yet been made to enable a classification of flora to be made according to the patient's mental state.

With regard to sour milk, all milk which was sour was not necessarily acidophilus milk; it might indeed be staphylococcus milk! It was necessary to have an absolutely sterile milk, and to carry out the work under strict antiseptic precautions. He had the bottles and the milk boiled, and tests were made with sub-cultures from time to time, to make sure that there were no accidental contaminations. Much harm could be done if the material given to the patients was not properly prepared.

DIVISIONAL MEETINGS.

SOUTH-EASTERN DIVISION.

THE AUTUMN MEETING of the Division was held, by kind invitation of Col. W. H. F. à Beckett and Mrs. à Beckett, with whom was associated Dr. W. F. Umney, the Medical Superintendent, at The Flower House, Beckenham Lane, Catford, London, S.E. 6, on Monday, October 14, 1929.

There were present twenty-three members and several visitors, including Dr. G. R. F. Stilwell, a former Medical Superintendent of Flower House.

Prior to an excellent luncheon members were conducted by Col. à Beckett and Dr. Umney round the house and gardens, and were delighted with the elegance and comfort of the former and the lay-out of the latter. A stream which runs through the gardens divides to surround a plateau, which presented a vision of flowers probably not to be seen anywhere outside Holland. Near by are the remains of an old chapel, dating from Tudor times, at which the hounds of the local hunt meets were blessed.

At the meeting which followed, Dr. J. R. Lord, Past President of the Association, took the chair.

Minutes.

The minutes of last meeting, having been published *in extenso* in the Journal, were allowed to be taken as read and were then approved and signed by the Chairman.

Obituary.

The Chairman then referred to the loss to the Association and particularly to the South-Eastern Division by the decease of Drs. David Bower and Fletcher Beach.

In regard to the former he remarked that at that gathering he could add but little to what they already knew of him. His kind and helpful personality had been a source of strength and encouragement to many an earnest junior member, among

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whom he, the speaker, had found himself. On Dr. Bower's work on the Council and the Parliamentary Committee he need not dilate. The respect and affection in which he was held by the Division were shown when it did him the highest honour within its power by electing him its first Chairman.

His, the speaker's, description of Dr. Bower's life and doings, a task which had fallen to his lot at the last annual meeting, would appear in due course in the Journal, together with an obituary notice by Col. Ernest White.

Of Dr. Fletcher Beach's services to psychiatry and to the Association he could, had time permitted, have spoken at length, but here again an extended obituary notice in the Journal would supplement any description of the deceased gentleman he could give now. Dr. Fletcher Beach's greatest work had been in regard to the mental defective. To him and to the late Dr. Shuttleworth, more than to anyone else, were due the humane provisions of the Mental Deficiency Act. He had also done fine work in the scientific study of the mental and physical welfare of children. Among his published writings were contributions to Tuke's *Dictionary of Psychological Medicine* and Allbutt's *System of Medicine*. He joined the Association in 1874 and for many years did good work on the Council and Parliamentary Committee. He was President of the Association for the year 1900–1. What Shuttleworth did for the Royal Albert Institution at Lancaster Fletcher Beach did for Darenth schools, which he organized on much the same lines. He remained there for some twenty years, but psychiatry had seen less and less of him since he took up neurological work, chiefly as a consultant. As everyone present knew, Fletcher Beach was Consulting Physician at the West End Hospital for Nervous Diseases at the time of his death on August 18.

As an editor of the Journal he, the speaker, had to keep himself up to date as to the seniority of members. Sir James Crichton-Browne, who joined in 1863, was by many years the oldest living member of the Association, and only one other was living who joined in the 60's. The hand of death had been very heavy of late in regard to the 70's members, among whom were Bowers and Fletcher Beach. Only three more, as far as his, the speaker's, recollection went, remained alive.

[Inquiry subsequently confirmed this : T. W. McDowall, 1870 ; J. Merson, 1877 ; W. J. Dodds, 1879.]

Finally it was moved from the Chair, and agreed to by the meeting, that the deaths referred to should be recorded in the minutes, with an expression of the regret the Division felt at the loss the Association had thereby sustained, and that suitable letters of sympathy be sent to the relatives in each case.

Members rose and stood in silence as a mark of respect for the deceased members.

Vote of Thanks for Hospitality.

The Chairman said there had not been the usual opportunity at the luncheon for members to express their appreciation of the generous hospitality they had received at the hands of their host and hostess. He therefore took this, the earliest opportunity, at the suggestion of the Honorary Secretary, of repairing that omission. He felt sure that all present would support him in saying that they had enjoyed a thoroughly good lunch, and that their visit to the house and gardens had given them all the greatest pleasure. They would all agree, having seen that vista of flowers of all hues, that the place was most appropriately named. The house gave them the impression of homely care and kindly treatment, upon which he congratulated the management and the Medical Superintendent. The speaker said his visit had become sacred because the house had once been the home for many years of one who had the respect, admiration and affection of many. He referred to the late Dr. Charles Mercier. A great figure in psychiatry of an earlier date had also resided there, namely, Dr. Forbes Winslow, the elder, and his strikingly beautiful wife. But he would not anticipate Col. à Beckett's paper by saying any more.

A resolution of cordial thanks to Col. and Mrs. à Beckett for their kindness was agreed to unanimously, to which Col. à Beckett replied.

Date and Place of the Spring Meeting, 1930.

The invitation of Dr. David Rice (who was present) to hold the Spring Meeting at the City Mental Hospital, Hellesdon, Norwich, was, on the recommendation of

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the Divisional Committee of Management, accepted with great pleasure, subject to its being arranged to take place some time before May 9, the date of the next quarterly meeting. It was left to the Honorary Secretary and Dr. Rice to decide this.

Divisional Vacancy on the Council.

The Divisional Committee of Management recommended that the vacancy on the Council caused by the death of Dr. David Bower should be temporarily filled, in accordance with the Bye-laws, at the next meeting and a new chairman of the Division elected. This was agreed to, and a circular asking for nominations for this and for the officers (1930–31) would be issued at an early date.

Election of New Members.

The Chairman, having appointed Drs. Cedric Bower and Macfarlane scrutineers, announced that the following candidates had by ballot been unanimously elected ordinary members of the Association :

EDWIN LANCELOT HOPKINS, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H., D.P.M., Deputy Medical Superintendent, West Park Mental Hospital; Bymoor, West Park, Epsom.
Proposed by Drs. N. Roberts, P. K. McCowan and L. H. Wootton.

ANNIE MARGARET MCGRATH, B.A.Lond., M.R.C.S., L.R.C.P., Pathologist, Herts County Mental Hospital, Hill End, St. Albans, Herts.
Proposed by Drs. W. J. T. Kimber, A. Shepherd and Noel Sergeant.

WILLIAM FRANCIS UMNEY, M.D., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, The Flower House, Beckenham Lane, London, S.E. 6.
Proposed by Drs. Noel Sergeant, Percy Smith and Edward Mapother.

ARCHIBALD MONTGOMERY MACCALLUM, M.B., Ch.B.Glasg., Assistant Medical Officer, Ipswich Mental Hospital.
Proposed by Drs. W. M. Ogilvie, Brooks Keith and Noel Sergeant.

Correspondence.

The Honorary Secretary then read letters of thanks from Mrs. Mackenzie Wallis and Sir Hubert Bond for letters he had sent them at the direction of the last meeting of the Division.

PAPER.

"The History of the Flower House," by Col. W. H. F. À BECKETT.

[*Abstract.*]

"It might be of interest to state that the earliest record that can be found concerning this property centres around the period of Henry VIII, when an early historian of Kent mentioned that King Henry set out from Southend Palace to Carshalton to meet his Queen. Those of you who have been to the latter place will remember a stone outside the Parish Church dedicated to Anne Boleyn, as the place where she and King Henry first met. Certainly the house in its initial state existed in the Elizabethan period. It has been added to at various periods, and I am told that from the air its shape resembles an F. Perhaps by additions some day we may complete our other initial. And now, I am afraid I am going to disappoint you. Those of you who did us the honour this morning of visiting our garden and seeing the flowers, of which we are rather proud, no doubt will say that the name chosen for the house is a most appropriate one ; perhaps you will consider that we have kept up the reputation of The Flower House. Here comes the disappointment.

The house was called after two old maiden ladies, who by repute were anything but romantic, and I believe rather martinets in the hamlet, called the Misses Flower. Hence, in one fell swoop, our romance is dashed to the ground !

The room in which you are at present assembled is a part of the very old house, of Georgian antiquity, and the ceiling in the patients' dining-room has been admired as a very good example of early Georgian architecture. Perhaps you have noticed the marble mantel-piece in the patients' drawing-room, which is a genuine Adam mantel-piece, being hand-carved out of the solid marble.

As regards the home itself, it was taken by my grandfather, the late Dr. Forbes Winslow, from the present Lord Forster (who, by the way, was born here) some sixty years ago, and it is on record that it was his wish and intention to start the

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Home as one for gentlemen only—(we are still the only one in England)—to furnish it as much as possible like a country house, to inculcate the spirit of club life, and make it as little like an institution as possible, but with the necessary precautions that have to be taken for the safety of the patients.

When Dr. Winslow died, Dr. Charles Mercier took his place. He was then a young man just released from his studies, but for nearly forty years he was a faithful and true friend of my family and carried on the traditions of the place, always remembering my grandfather's wish. His enforced retirement on account of ill-health came at a most inopportune time, because both my brother and I, who, at the death of my father, were the acting proprietors, were on service with our regiments abroad. Nevertheless, I was able to get leave from my regiment in the West Indies, to instal Dr. Bullmore, on the recommendation of the Board of Control, to whom I can never be sufficiently grateful for the kind assistance and advice they have always given in selecting the medical staff.

The war broke out shortly afterwards, and again we, as proprietors, were unable to watch the fortunes of the house. When it was over a change in the medical superintendence presented itself once more at short notice, and my old friend and cousin, Dr. George Stilwell, took over the medical superintendence of the house. Under his guidance the house maintained its former reputation, and we were very sorry when his practice in Beckenham compelled him to resign.

I might here mention that when the war ended, my brother and I—who were both Old Contemptible gunners—thought that we might find the Flower House useful for some poor shell-shocked officers who were mentally disabled by the war. We decided to build a special wing, the rooms of which were to be as much as possible like officers' quarters; and we were persuaded that in certain types of cases an environment of this kind would certainly make them happier and thus help them.

The plan worked extremely well, and cases came and left very much improved in health. I may mention that where an officer's people were not able to afford our lowest fees—they were always charged our lowest—we took a patient for just the meagre sum (if I may say so) that the Government always pays for service from outside its own ranks.

The opening of the new wing was performed by Sir Henry Dickens, the Common Serjeant of the City of London; and in this connection it might be of interest to state that the late Charles Dickens, his father, was a great personal friend of my grandfather, Gilbert Abbott à Beckett, who wrote *The Comic History of England*; while Sir Henry was a great personal friend of my father. His family were at school with my brother and myself; while my little girl a year or two ago walked in the Lord Mayor's Procession at the Mansion House hand in hand with the fourth generation of Dickenses. It might be amusing to state that when we asked Sir Henry to open the new wing, my brother (who, like myself, is no scholar) spelt the Common *Sergeant* on the invitation card he issued as if he were a military gentleman and not the Serjeant of the legal profession, which of course is spelt differently. Sir Harry rang up in the morning to ask in what garb he should come down, and Pat suggested that a morning coat and a top hat would lend dignity to the occasion. Sir Harry said, "If I am only a 'common sergeant' I think it would be better if I did not come down so overdressed!" So you see he got his own back.

At the end of the War, when I retired from the Services, my wife and I determined that we should give up our lives to the old place, and consequently we came in residence.

The house, on our arrival, required renovation, and I feel that it is fitting to allude to my wife's part as matron since we arrived here. She reorganized the whole place as far as the internal administration was concerned; turned the early Victorian atmosphere into what obtains to-day. Electric light was installed; and it was entirely re-decorated and furnished. The colour schemes of the rooms are wholly her idea.

We have always tried really to create a homely atmosphere. Sports of all kinds are encouraged and we are proud of both our cricket and football elevens. The spiritual welfare of the patients is specially studied, and a service is held weekly in the house for those unable to go outside."

A generous reference to the work of Dr. Umney and the nursing staff and an appreciation of the Association's visit concluded a very interesting document.

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DISCUSSION.

The CHAIRMAN then expressed the thanks of the meeting for the charming paper they had just heard. He thought the notion that a liking for club surroundings was limited to men no longer held good. Ladies' clubs in London presented to him no features not present in men's clubs, and he felt sure the house and its surroundings were well suited to the needs of both men and women. The place breathed homeliness and restfulness, and was satisfying to one's artistic sense. The discussion was then continued by Drs. STILWELL, UMNEY, SERGEANT, RICE and NORMAN.

Afterwards members and other guests were entertained to tea.

SOUTH-WESTERN DIVISION.

THE AUTUMN MEETING of the Division was held by kind invitation of the Committee of Visitors and Dr. J. McGarvey at the County Mental Hospital, Wells, Somerset, on Thursday, October 24, 1929.

Fourteen members were present and three visitors (Alderman R. A. Hobhouse, Chairman of the Visiting Committee, and Drs. Coleman and Simpson).

Sir John Macpherson was voted to the Chair.

The minutes of the last meeting were confirmed and signed.

Apologies for absence were received from the President, Ex-President, Dr. Soutar, Divisional Chairman, and other members.

Dr. W. Starkey was nominated as Hon. Divisional Secretary, and Drs. Barton White and J. McGarvey as Representative Members of Council for the year 1930–31.

The following was unanimously elected an ordinary member of the Association:

DAVID SHERIDAN SPENCE, B.A., M.B., B.Ch.Dubl., Assistant Medical Officer, City and County Mental Hospital, Burghill, Hereford.

Proposed by Drs. J. G. Smith, D. M. Cox and W. Starkey.

An invitation from Dr. S. Edgar Martin to hold the Spring Meeting on Thursday, April 24, 1930, at Hume Towers, Bournemouth, was gratefully accepted.

The remainder of the meeting was of a purely clinical character, and several interesting and instructive cases were shown and discussed by the medical staff of the Hospital.

Dr. MCGARVEY showed two female idiots, members of a family of mental defectives, in which there was a history of chronic lead poisoning in the mother—the source of the poison being traced to the water supply derived from a well on the site of an ancient lead mine dating from Roman times.

Dr. A. DARLINGTON showed a woman with signs pointing to a lesion in the pons, and discussed the differential diagnosis between tumour and a vascular lesion.

Dr. D. MENZIES showed a male case of cerebral syphilis with unusual symptoms, and dealt with the distinction between meningo-vascular syphilis and general paresis. A discussion ensued, in which the Chairman and Drs. J. M. Rutherford, E. Barton White, G. W. T. H. Fleming and others took part.

During the morning members visited the Hospital and inspected the various departments. They were most hospitably entertained to lunch, and after the meeting Dr. and Mrs. McGarvey kindly provided tea.

The extremely unfavourable weather conditions prevented several members who had intended to be present from reaching the Hospital.

NORTHERN AND MIDLAND DIVISION.

THE AUTUMN MEETING of the Division was held, by the courtesy of Dr. A. T. W. Forrester, at Warwick County Mental Hospital, Hatton, near Warwick, on Thursday, October 24, 1929.

There were twenty-four members present.

During the forenoon members were shown over the hospital, and were afterwards entertained to lunch.

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Dr. GILMOUR proposed a vote of thanks to Dr. Forrester and the Visiting Committee of the Hospital for their kind hospitality. This was carried by acclamation, and Sir Michael Lakin, Bart., Chairman of the Committee, responded.

Dr. J. R. Gilmour, Chairman of the Division, presided.

The minutes of the previous meeting were read and confirmed, and apologies for absence were communicated.

It was resolved that in view of the appointment of a Divisional Chairman, the election of a Divisional Committee of Management was not necessary.

The following members were elected to serve on the Divisional Clinical Committee: Prof J. Shaw Bolton, Drs. M. A. Archdale, J. Bain, H. Dove Cormac, A. T. W. Forrester and Neil MacLeod.

It was resolved to accept Dr. Barkas's invitation to hold the Spring Meeting in 1930 at The Lawn, Lincoln, the Secretary being instructed to make inquiries regarding the most generally convenient day of the last week of April.

The following resolution of Council of July 9th, 1929, was considered:

> "That the Council approves the principle of the wearing of a badge of office by the Chairman of a Division, when presiding over a Divisional Meeting, and on other suitable occasions."

And it was resolved:

> "That this Division is not desirous that its Chairman should wear a Badge of Office."

The following Council minute, dated February 16, 1928, was read in reply to a question (*see* Autumn Meeting, 1927):

> "The following resolution by the Northern and Midland Division was considered: 'That the date of the Autumn Nursing Examination be altered to the last Monday in November and the first Monday in December.' Dr. Soutar moved and Dr. James seconded that no alteration be made. This was carried."

Dr. FLORENCE M. GAMBLE read a most interesting paper which the Chairman described as "a monument of industry," entitled "Some Laboratory Findings in the Routine Investigation of Acute Admissions."

Dr. H. DOVE CORMAC introduced for discussion the subject of "The Training and Examination of Mental Nurses."

He referred to various changes which he thought might with advantage be effected.

He pointed out that the number of candidates had grown very considerably, and suggested that as the proportion of entries from English and Welsh mental hospitals, as compared with those from Scotland and Ireland, was about 3 to 2, two additional examiners for England should be appointed, thus making one for each Division. The members present unanimously agreed with this view.

Dr. Dove Cormac also referred to the fact that in the last final examination the question paper contained only two questions which could be described as bearing on mental disorders and mental nursing, whereas the other six dealt with physical diseases and general nursing. He thought that, as the Certificate granted to our nurses was for proficiency in *mental* nursing, the proportion of questions on that subject should be as 2 to 1.

On a vote being taken 10 members were in favour of the suggestion, but 13 considered that the questions set should be in the proportion of 50% mental and 50% general.

Dr. G. L. BRUNTON proposed that a return to the three-examination system be recommended. The motion was defeated by a majority.

Most of the members present took part in the discussion, and the view was generally expressed that the visiting examiner should be the chief examiner at both the preliminary and final examination of nurses. Dr. Dove Cormac was requested to convey the opinions of the meeting to the Education Committee.

Dr. CHEVENS outlined a scheme of work of a group of the Psychopathology Sub-Committee on the Relationship of Heredity and Suicide, and invited criticisms and suggestions.

The painstaking work of Dr. Nicole, the Secretary of the Psychopathology Sub-Committee, was referred to, and it was pointed put that the small group formed to undertake research into the psychopathic inheritance of suicidal cases was one of the many results of his energy in organization.

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A few relevant facts about suicide were then mentioned, its possible relation to the climacteric in both sexes remarked on, and a summary given of the mental condition of 50 cases of potential suicide recently examined at Parkside Mental Hospital.

Various theories of suicide were then noted, including Freud's and Hoch's, and it was pointed out that while these theories might account for the mechanism of the actual suicidal attempt, they did not explain the deeper factor—the reason for that mechanism.

The present group had been formed to try and discover if this deeper factor is related in any way to inherited mental characteristics.

A short summary of the scheme was then given, which fell under the following headings:

1. The mental state of the patient.
2. The physical state of the patient, classifying under (1) type of personality and (2) physical type.
3. The personal history of the patient.
4. The family history, paying special attention to such matters as types, evidence of psychopathic personalities, definite morbid symptoms, etc.
5. Correlation of (1), (2), (3) and (4).
6. Pooling of results by all the investigators for the purpose of joint consideration.

Suggestions as to various methods of work were referred to under each of these headings.

In conclusion, the reference of the Commissioners in their last Annual Report to the necessity of research into the subject of suicide was mentioned, and the value of co-operative work in this connection emphasized.

Dr. FORRESTER gave a most instructive and interesting demonstration of treatment of recent cases by means of Swedish drill and other varied and graded exercises, including country dancing. The patients wore suitable and pleasing costumes. The beneficial effect of the treatment was evident, and Dr. Forrester spoke of the very satisfactory results which he had obtained.

Members were afterwards very kindly entertained to tea by Mrs. Forrester.

SCOTTISH DIVISION.

The AUTUMN MEETING of the Scottish Division was held at the Murray Royal Asylum, Perth, on Friday, November 15, 1929.

There were sixteen members present.

Dr. R. B. Campbell, Divisional Chairman, presided.

The minutes of the last Meeting were read, approved, and signed by the Chairman.

Apologies for absence were intimated from the President, Sir Arthur Rose, Prof. G. M. Robertson, and Drs. Keay, Carre, Leggatt, Skeen, Henderson, Ivy Mackenzie, McMillan, Hotchkis, Steele, Chislett, O'Flaherty, Connell, Fairbairn, McLaren, Yellowlees, Dods Brown, McRae and Sturrock.

Dr. Douglas McRae was nominated for appointment as Divisional Chairman, but Dr. Easterbrook explained that Dr. McRae was not desirous at present of holding office in the Division. Dr. Neil T. Kerr was thereupon nominated for the position of Divisional Chairman for 1930–31.

Drs. Neil T. Kerr and C. J. Shaw were nominated Representative Members of Council, and Dr. W. M. Buchanan Divisional Secretary for 1930–31.

The Divisional Standing Committee of Management was appointed as follows: The Chairman of the Division, the Representative Members of Council, the Nominated Member of Council, the Divisional Secretary and Dr. Aidan G. W. Thomson.

The following candidates were unanimously elected by ballot ordinary members of the Association:

THOMAS ARTHUR HOWARD MUNRO, M.B., Ch.B.Edin., Dip. Psych., Assistant Physician (temporary), Royal Edinburgh Hospital for Mental and Nervous Disorders, Craig House, Edinburgh.

Proposed by Prof. G. M. Robertson, Drs. W. M. McAlister and D. S. Spence.

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DUNCAN MACMILLAN, B.Sc., M.D., Ch.B.Edin., Assistant Physician, Crichton Royal Institution, Dumfries.

Proposed by Drs. C. C. Easterbrook, J. McDougall and W. J. Raitt.

ANDREW MCNAE WYLLIE, B.Sc., M.B., Ch.B.Glasg., Clinical Pathologist, Crichton Royal Institution, Dumfries.

Proposed by Drs. C. C. Easterbrook, J. McDougall, and W. J. Raitt.

ARTHUR SPENCER PATERSON, B.A.Oxon., M.B., Ch.B.Edin., Assistant Medical Officer, Glasgow Royal Mental Hospital, Gartnavel, Glasgow.

Proposed by Drs. D. K. Henderson, A. G. W. Thomson and W. M. Buchanan.

Following upon a short discussion of the changes likely to follow the operation of the Local Government (Scotland) Act, 1929, the reference made to the Divisional Committee of Management at the last meeting was continued.

The SECRETARY having explained that Dr. D. K. Henderson, on the invitation of Dr. G. H. Kirby, the Director, was sailing the following day to attend the opening ceremony of the New York Psychiatric Institute and Hospital, it was unanimously resolved to appoint Dr. Henderson official representative of the Scottish Division at the ceremony, and to ask him to convey to Dr. Kirby and his colleagues the congratulations and good wishes of the members.

On the motion of Dr. Donald Ross, it was resolved that, in future, the Chairman and Secretary be authorized to give any member attending Foreign Congresses, etc., sanction to represent the Division.

Members were kindly entertained to lunch, after which Lord Scone welcomed the members on behalf of the Directors to the Murray Royal Asylum. The Chairman cordially thanked the Directors and Dr. W. D. Chambers and his staff for their kind hospitality and for the arrangements made in connection with the meeting.

Thereafter members had an opportunity of inspecting the hospital, under the guidance of Dr. Chambers and his assistants.

On the meeting reassembling Dr. Thornton read a short paper on "Three Cases of Death from Rupture of the Heart," and an interesting discussion was taken part in by Drs. H. Ferguson Watson, D. Ross, A. G. W. Thomson and W. M. Buchanan.

Dr. CHAMBERS presented (1) a case of katatonic dementia præcox in a patient suffering from Hirschsprung's disease, specially interesting from the point of view of prognosis, and (2) a case exhibiting an unusual series of neurological signs.

A vote of thanks to the Chairman terminated the business of the meeting and thereafter members were kindly entertained to tea at Murray House.

IRISH DIVISION.

THE AUTUMN QUARTERLY AND CLINICAL MEETING of the Irish Division of the Royal Medico-Psychological Association was held in the Royal College of Physicians, Kildare Street, Dublin (by kind permission of the President and Fellows), on Thursday, November 7, 1929.

There were seventeen members present.

Dr. R. R. Leeper, Chairman of the Division, presided.

Apologies for unavoidable absence were received from Dr. Martin, Dr. Owen Felix McCarthy, Lt.-Col. W. R. Dawson, Dr. S. J. Graham and Dr. Norman Graham.

The CHAIRMAN, in opening the meeting, referred to the loss the Division had sustained in the deaths of Dr. Bagenal Harvey, of Clonmel, and Dr. Patrick O'Doherty, of Sligo. A vote of sympathy was passed in silence, the members standing.

The minutes of the last meeting were read, approved and signed by the Chairman.

The meeting then considered the question of the establishment of "Study Groups" in Ireland. A discussion ensued, in which it was the consensus of opinion that such groups might augment the clinical activity of the Division, and on the proposal of Dr. Moran, Dr. Honan, of Downpatrick, and Dr. FitzGerald of Grangegorman Mental Hospital, agreed to take up the matter and, if possible, to organize groups in their respective areas.

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PAPER.—"The Post-Graduate Course in Neurology and Psychiatry in Vienna," by JOHN DUNNE, M.B., D.M.D.

Any account of the clinic of Vienna would be incomplete without reference to the American Medical Association there. This Association, with its headquarters in the Alserstrasse, was founded to serve as an introduction to American doctors and students who wish to take courses in the clinic. It has a very large membership, the majority being Americans, the remainder consisting of students from other foreign countries. Not only does it organize courses for intending students, but it is also a great help to the stranger, for it supplies useful information regarding hotels, pensions, restaurants, places of interest, prices, etc., and at the same time serves as a clubroom where the work of the day can be discussed over a litre of beer or wine. The membership fee is very moderate, and the value that one gets in return cannot be measured by it.

It was the American Medical Association which arranged a six-weeks' intensive course in psychiatry of which many members of the R.M.P.A. took advantage. The number to take part in the course was limited to fifteen. Amongst those were three from Ireland—Dr. Cassin, of Kilkenny, Dr. Duncan, of Belfast, and myself.

The Psychiatric Clinic, called after its founder, forms part of the large general hospital of Vienna. Wagner Jauregg is still the guiding spirit, and unites under his able leadership the various schools of treatment. Here one finds the greatest and most famous psychiatrists in the world, each concentrating on nervous and mental diseases from his own particular angle. The Clinic is supplied with patients from two sources: 1, a large number attend voluntarily, either of their own accord, or are brought by their relatives. 2, all cases notified by the police are first brought to the Clinic before being sent to the State mental hospital. Each patient undergoes an exhaustive examination, psychologically, physiologically, serologically, radiologically, neurologically, etc. In this way he has the services of an army of specialists, who are assisted by a large number of students. The result of this system is that Vienna is looked upon as the home of research. It is the Mecca of students from all parts of the world, and there is an ever-growing population of foreigners who are willing to pay for the privilege of working in the Vienna Clinic.

The pecuniary advantage which the Clinic and the City derive in this way must be considerable.

It would be impossible in a short paper to give anything like a detailed account of our course. It was most comprehensive. I will only allude to the more interesting subjects.

Beginning with psycho-analysis, my impression of it as a method of treatment was one of disappointment.

Hypnotism was dealt with largely and proved most interesting. The technique is quite simple and easily carried out on suitable patients. Cases in which it had been of benefit—for example, alcoholics—were demonstrated.

Radiology as an aid to the study of nervous diseases was lectured on by Prof. Schiller. His researches into the causation of such obscure conditions as post-traumatic shock (often mistaken for malingering) and migraine have led to discoveries of the first importance.

The vegetative nervous system, as presented by Dr. Spiegel, was one of the most interesting parts of our course.

Pathology was also very absorbing. Among the many original discoveries made by Dr. Marburg is his claim that congenital syphilis can skip a generation.

Speech defects were dealt with in two lectures by Prof. Stein, and as it was the shortest subject of our course, I propose to give a *résumé* of his lectures.

To understand errors of speech we must understand its origin and development. At first we have the cry of the infant, which is an expression of the child's desires, the intonation of the cry, even then, varying with the cause, whether pain, cold, hunger, etc. It has been noticed that a child in pain begins to cry with a loud explosive noise, while if it just wants to attract attention—being naughty—the cry begins softly. Excessive attention or yielding on the part of the mother to the child's crying will have a bad effect on the formation of its character. Gradually the child, after a few months' exercise of his respiratory and vocal muscles, begins to produce all sorts of sounds by involuntary movements of the lips, tongue and

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palate. These sounds are pleasing to the child and he continues to repeat them over and over again. The repetition of syllables is the most primitive form of word-building, *e.g.*, "papa," "mama," "dada," and may be used later against the person's will as in stuttering. We hear those primitive repetitions also in terms of endearment by adults; for example "puss-puss," "diddums," etc.

The child practises his sound-building, and learns more in the first three years than in all the rest of his life. Sometimes it happens that a child does not make any effort to speak. This may be due to failure of development from congenital defect. But it has often been shown that children who have average intelligence may be dumb.

No. 1: A 12-year-old girl is dumb and is supposed to hear nothing. The otherwise well-developed child uttered no sound during the examination, and reacted to no shouting or other sound expressions. Testing, however, with Urbanitch's harmonica, especially designed for the purpose, showed that the little girl certainly heard notes at a distance of 4 metres. Training of her hearing was begun. Continued hearing and speech training was so successful that not only was she fit to take part in ordinary household duties, but she was able to learn the whole of the first year's curriculum in the public school in one year.

No. 2: A girl of 14 years who had never spoken, and who had had frequent fits of violence. She had a vacant, sullen expression and was looked on as a case of imbecility. The history showed that the mutism was in no way the expression of imbecility. The girl learned in a period of months the separate sounds, syllables and words and the writing symbols. The further development of her speech and of her psychical condition showed that the whole thing was due to an inferiority complex.

Continual stimulation of the hitherto untrained auditory nerves will cause them to take up their function.

Some children develop speech to a certain extent only. They are either lacking in certain sounds or else they mis-pronounce. For instance, instead of saying kettle they say *thettle*; vessel, *wethle*, etc. This has been usually attributed to defects in the organs of speech, such as the muscles of the lips, tongue, etc. But in most cases this is not so. The organs of speech may be perfect, but have not been educated properly. Anything likely to bring the defect to the notice of the child in an unpleasant manner, such as the jeering of his school-mates or the correction of his parents, is very harmful. It will either discourage the child, causing an inferiority complex with extreme depression, even making him give up speech altogether, or it will cause him to over-exert in correcting his defect, and leads to a different type of speech defect, or stutter. For example:

Since my return I have met an interesting example of the result of interfering with the child's normal evolution in written speech. A child of 10 would write only with his left hand. The teacher insisted on his writing with his right hand. The result was that the child now wrote backwards—a typical example of mirror-writing—and no persuasion by his teacher or parents could prevail on him to write otherwise. It was looked on as a serious defect. Being interested in the child I tried to gain his confidence without referring to his writing. Having succeeded in doing this, I showed him how to write properly, and to my extreme satisfaction he wrote a perfectly normal hand and has not done any mirror-writing since.

Stuttering shows itself as convulsive movements of the speech mechanism which interrupt the flow of speech. According to old views, stuttering was a thing apart altogether from the will-power of the individual, and it was attributed to mechanical defect. It is now recognized that this view is altogether wrong, and that stuttering is merely a failure of the speech muscles to work in harmony, and is bound up with the volition and psychic make-up of the individual. Every intelligent child in learning to speak has to do a considerable amount of thinking before uttering a sentence. With a nervous child this gives rise to a tendency to repetition in the case of a difficult sentence, *i.e.*, the so-called clonic stutter, as in "I am de-*de-de-delighted*," or "He has *g-g-g-gone*." If the anxious parent brings the defect to the consciousness of the child by reproving him, he makes strenuous efforts to overcome it, which result in a tonic stutter. Instead of saying *ttttttttttttttttttable* he says "*t—t—able*." If no notice is taken of the original clonic stutter, it is probable that it would disappear after a short time. The parent again reproves, and now the child brings in the other muscles of the body to help him. He becomes more and more nervous with fears not related

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to articulation, and finally will not speak, or only very little, and appears stupid. It is possible that such a child will say 2 and 2 make 6, or answer "I don't know" to "What is your name?" It is not that he is stupid, but he is anxious and afraid to speak certain words, and prefers to say another word which is not difficult to articulate. The child is then considered defective, and may not even be recognized as a stutterer. It is quite easy to treat by the following method:

No. 1: Treating the inferiority complex by psychic suggestion. This is done by explaining to the child the reason of his own psychic abnormality and gaining his confidence.

No. 2: By breathing exercises. Normal respiration in speaking consists of long expiration and short inspiration. In stutterers inspiration is normal and expiration is short. The technique of those exercises is very simple.

No. 3: Articulation exercises. These show the position of the tongue and lips for the consonants—at first easy consonants, then difficult ones.

In this way it is claimed that all cases of stuttering can be cured in six months.

We visited the State Mental Hospital, which is situated about an hour's journey from Vienna, in the centre of very nice country. It is a modern institution, completed in 1907, when money was more plentiful in Austria than it is now. The institution is laid out in villas, twenty-four in all, and contains 3,800 patients. The food is cooked in one central kitchen and is conveyed to each department by means of electric trams, and it does not lose any heat in transit. Very thick unbreakable glass is used in the large windows of single rooms and wards. This glass is a little more expensive than ordinary glass, but the saving in breakages is worth the increased cost. The advantage of it is that patients get much more light than in the smaller windows which we have in Ireland. A regrettable feature was the use of cages over the beds for refractory cases. This method of restraint was also used in the clinic in Vienna, and it was sad to see many unfortunate patients struggling like wild animals behind the network of their cages of plaited cord.

Before concluding this paper I would like to refer to the other attractions which Vienna has to offer. To my mind it is one of the most beautiful cities in the world. To the student of architecture, of history, to the lover of music, to those interested in art it is a never-ending source of joy. The noble edifices of Vienna, the Stephansdom, the Mariestigekirche, the Hofburg and many others are a delight to see. The opera, the open-air concerts are a credit to the home of Beethoven and Schubert. The National Art Gallery or Kunst-historiches Museum can boast of one of the finest collections of old masters in the world. It is almost incredible that such a large collection of the works of each immortal painter could be made—Raphael, Titian, Murillo, Velasquez, Romney, etc.

The people themselves are the personification of hospitality.

Dr. Dunne's paper gave rise to an interesting discussion upon psycho-analysis. The value of this method of treatment in certain cases was upheld by Dr. J. FITZGERALD, but many members recounted experiences where the treatment had been entirely harmful.

Dr. B. F. HONAN, of Downpatrick, then gave the meeting a *résumé* of his experiences as a member of the Association's party in the recent visit to the Paris Hospitals.

Dr. Honan's remarks gave rise to a most interesting discussion on Continental hospitals and methods. Dr. M. J. NOLAN, Dr. J. MILLS, Dr. L. GAVIN, Dr. J. O'CONOR DONELAN, Dr. P. J. CASSIN and others recorded their experiences at various times of the hospitals of France, Belgium and Holland. It was the fairly general experience that, although Continental hospitals were in the main better equipped for research than Irish hospitals, many of their methods of treatment, especially with regard to restraint, seclusion and the giving of powerful sedative drugs, would not be tolerated in Ireland.

Dr. NOLAN stated that occupational therapy was in an advanced state in Holland. Almost all the patients were occupied and, to accomplish this, there was one nurse to every three patients.

Dr. MILLS cast a doubt on the wisdom of exploring the various cavities of the body in the search for septic foci, to the extent practised in a hospital he had recently visited.

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Dr. DUNNE, in replying, suggested that some of the Irish Mental Hospitals might perhaps, with advantage, be linked up with one of the Universities, as is the practice in Vienna, thereby placing at their disposal men who were eminently fitted for research into these difficult problems.

The CHAIRMAN and many of the members expressed their gratitude to Dr. Dunne and Dr. Honan for their interesting and valuable communications.

Dr. GAVIN referred to the desirability of new lunacy legislation in the Irish Free State, as it was his opinion that some of their committal forms in use were archaic and put undue hardships on patients and relatives.

Dr. NOLAN stated that legislation was pending in Northern Ireland.

The CHAIRMAN stated that this problem of fresh legislation had been before the Association for thirty years and that, so far, they had found it impossible to get anything done.

It was then agreed to hold the next Quarterly and Clinical Meeting at Ballinasloe Mental Hospital, by the kind invitation of Dr. Mills, on Thursday, April 3, 1930.

On the motion of the CHAIRMAN, a vote of thanks was unanimously passed to the President and Fellows of the Royal College of Physicians for their courtesy in granting the use of the College to the Division for its Autumn Meeting.

This terminated the proceedings.

DIVISIONAL CLINICAL MEETINGS.

Horton Mental Hospital, Epsom.*

Divisional Clinical Meetings of the South-Eastern Division were inaugurated by a clinical meeting of the Southern Area of the Division at Horton Mental Hospital, Epsom, on April 4, 1929.

There were present 22 members and 5 visitors. Dr. J. R. Lord presided.

The CHAIRMAN, in opening the proceedings, explained briefly the purposes for which the meetings were held. They were principally two: (1) To enable medical officers of mental hospitals (whether members or not), and others, to meet informally for the examination and discussion of cases of mental disorder and any topics arising therefrom, and (2) to enable general practitioners to renew and enlarge that meagre clinical experience of mental disorders which they obtained as medical students.

The programme of the meeting was specially arranged to carry out these purposes.

The first patients which were to be shown were selected to carry out purpose (2): they were typical cases presenting no unusual features—demonstration cases of mental disorders of everyday occurrence. The remainder were cases of some special interest or difficulty, the study of which while carrying out (1) also furthered purpose (2).

It was very desirable that the medical staff of mental hospitals and neighbouring medical practitioners should become better acquainted with each other's points of view of the practice of psychiatry and also socially.

(1) He then exhibited cases showing the typical disorders of speech and train of thought in (i) acute mania, (ii) paraphrenia, (iii) katatonic excitement.

He also showed a case presenting true mental confusion, and explained that this symptom might or might not be of grave significance. Confusion might merely be attendant, for instance, on the distraction of attention occasioned by hallucinations, and the failure of apprehension, cognition and orientation which resulted therefrom. The prognosis in such cases was usually good. On the other hand, mental confusion might be significant of a deeper disorder and might be a precursor of dementia. Prof. Shaw Bolton points this out in an interesting contribution to the Mott Memorial book on "The *Rôle* of Mental Confusion in Prognosis," in which he lays down the dictum, "No mental confusion—no dementia."

Dr. Lord went on to remind them that the first and central fact of psychology was the Cartesian dictum, "I know myself knowing; I know myself feeling; I know myself willing or striving," and that it was the perceiving mind or "I" which established order out of that mass of presentations called by William James "buzzing booming confusion." Dependent on the severity of the cortical

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* Inadvertently omitted from July, 1929, number.

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associational lesion there would be first mental confusion and then the fading out of "I." Mental confusion without hallucinations or other distressing elements was a grave symptom suggesting an organic lesion. The case demonstrated he thought was of that nature.

(2) *The Treatment of Epilepsy by Belladonna*, by Dr. I. FROST.

The following reasons were given for the use of belladonna in the treatment of epilepsy: Certain epileptics come into the category of vagotonics; excluding these, many epileptics show a fall of systemic blood-pressure prior to a seizure; and before the introduction of bromides, belladonna was used in the treatment of epilepsy by Trousseau and other great clinical masters, and was found to have a marked and sometimes almost miraculous effect.

Three cases were shown. The first had a well-sustained average of 92 major fits per month; following the use of belladonna in the last month only one fit occurred. The second had an average of 54 fits per month; these were reduced to 4 fits. The third case had one fit every two or three days; she had now gone twenty-one days without a seizure.

It was not suggested that these examples proved the case in favour of belladonna; but they were described as suggestive, and were mentioned in order to excite the recollections of those who might have seen this drug in use formerly.

There was also a general improvement in the temper of patients in the intervals between the fits. Much of the effect was admitted to be due to suggestion, for it is known that even true epileptics may exhibit added hysterical features.

The whole epileptic ward had lined up for blood-pressure examination on hearing that a new treatment was to be tried, in hopeful and expectant attitude with increased contentment, as shown by a big fall in acts of destructivity. Dr. Frost admitted that this must have helped considerably the treatment he had commenced.

Dr. LORD pointed out that this was all to the good in the cure of the disordered mind.

Reference was also made to cases that had been put on strychnine alone, and who had either benefited or at least had shown no ill-effects; also to a case in which the injection of pilocarpine was followed by a fit.

Dr. P. K. MCCOWAN criticized the *rationale* of the treatment. None of the cases had shown any appreciable alteration in blood-pressure. He considered that the dramatic nature of the improvement was strongly in favour of a suggestive effect, and thought that the cases shown were not true epileptics.

Dr. FROST, in reply, said that belladonna might prevent the fall of blood-pressure which preceded a fit, a result which would not be detected by ordinary blood-pressure examinations.

Dr. WALK suggested that in cases where there was a superadded psychic element any remedy that caused the fits to cease for even a short period might break a vicious circle of physiogenic and psychogenic factors, and thus produce a more lasting result than in cases where the effect was purely physical.

Dr. T. P. REES stated that he had treated a number of cases with belladonna; the results had varied and were on the whole disappointing.

(3) Dr. G. F. PETERS showed a case of *Seven Months' Pregnancy in a Post-Encephalitic who also suffered from Syphilis.*

The patient had a history of diplopia and "influenza" four years previously, and from that time had been getting more depressed, had taken to drink, and neglected her home and family. On admission to Horton in February last she showed a well-marked Parkinsonian facies; she was seven months pregnant. Serological examination of the blood gave a strongly positive Wassermann reaction; the cerebro-spinal fluid was normal. She showed general rigidity and a Parkinsonian gait; in the right eye there was absence or diminution of various pupillary reflexes, and the right pupil was larger than the left. The vision of both eyes, as tested by Snellen's types, was $\frac{6}{9}$, and both fundi were normal in appearance. Movements of emotional expression were good, but voluntary movements of expression were absent or impaired. There was an occasional tremor of the right arm and hand when using them. The right ankle-jerk was less than the left, and there was an extensor Babinski response on both sides. The knee-jerks were equally increased. She had had four previous pregnancies, all of which had been normal, and the last one was in 1924. In the course of an earlier examination a "crossed" tendo Achillis jerk was reported, but this could not be obtained at the demonstration.

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In the discussion which followed, the exhibition of tincture of stramonium mx three times a day was suggested, in addition to the intravenous injection of neokharsivan already being given, and a favourable outlook for the pregnancy and parturition was generally acceded.

(4) Dr. W. D. NICOL demonstrated (*a*) a group of three cases in which *General Paralysis was superimposed on an Existing Psychosis.* Malarial treatment had only led to physical improvement in these cases and had not cured either primary or secondary mental disorder.

Dr. LORD pointed out that if Dr. Nicol's assumption was correct then it would have an effect on the results of malarial treatment as statistically stated.

(*b*) A case of *Huntington's Chorea with Syphilis.*

(*c*) A case showing *Extreme and General Chorea-Athetosis with Dysarthria and Total Inaccessibility.*

Dr. LORD said that it was possible that the mind in the last case might be quite clear. Wilson's disease had been suggested by Dr. Golla in 1925, but the diagnosis was by no means certain.

(5) Finally Dr. J. J. LAWS opened a discussion on the *Pathological and Psychological Significance of Cranial Hair Rubbing and Picking,* and demonstrated seven typical cases.

Dr. LORD remarked that in his experience such cases were much less common than formerly. Out of nearly 2,000 cases in that hospital only 20 hair-pickers could be found. They were all schizophrenics, except two melancholics, and these had some schizophrenic symptoms. Hair-picking might be a sign of incurability due to a degeneration of the supragranular layers of the prefrontal convolutions and a subsequent release from control of an infragranular layer activity of an early phyletic character. As to the reason "why" of hair-picking the text-books were silent. Kraepelin confessed it was unknown.*

The meeting then terminated and tea was provided by the Chairman.

Leavesden Mental Hospital, Watford.

A Clinical Meeting was held at the above Hospital on December 13, 1929, by kind invitation of the Medical Superintendent, Dr. R. M. Stewart.

Six members, including Dr. J. R. Lord, who was in the chair, and four visitors were present.

Dr. G. de M. RUDOLF showed a series of adult hydrocephalic and microcephalic cases and gave an account of the cerebro-spinal fluid pressure in these cases. The pressure in the hydrocephalic cases tended to be higher than amongst the microcephalics. Details of the investigation will be published later. Dr. Rudolf suggested that the administration of hypertonic saline solution to young hydrocephalics might be of value by reducing the pressure of the cerebro-spinal fluid at an early stage.

Dr. Rudolf demonstrated two other cases, one patient able to calculate the day of the week when given the date, and the other able to state from memory the number of words of any hymn. This patient also knew many of the psalms and collects.

Dr. R. M. STEWART exhibited a case of congenital diplegia with bilateral sixth nerve palsy. The patient also suffered from talipes equino-varus.

Dr. C. E. GALLAGHER described a pair of male uniovular twins. They resembled one another very closely, even to the arrangement of the teeth and the thumb-prints.

Dr. R. M. STEWART gave an account of the clinical and pathological features of epiloia or tuberose sclerosis, demonstrating a case of the disease. Much interest was expressed by the meeting.

Other cases shown included an unusual type of a post-encephalitic condition. Rhythmical involuntary movements of the jaw, lips and hands were present, but there was marked rigidity with hyper-extension of the neck. The head was retracted so much that the patient's face almost assumed the horizontal, and she guided her footsteps by watching the ceiling.

Dr. R. M. STEWART demonstrated a case of double athetosis. This patient, at one time under the care of Sir William Gowers, had taught herself to pick up articles, to feed herself, to sew, etc., with her feet.

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* Oswald said it was due to toxic irritation of the scalp.—EDS.

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STUDY TOUR AND POST-GRADUATE EDUCATIONAL INFORMATION SUB-COMMITTEE.

AN ACCOUNT OF A TOUR OF SOME MENTAL HOSPITALS AND CLINICS OF THE DEPARTMENT OF THE SEINE.

(*June*, 1929.)

By A. E. Evans, M.B.

The completeness of the programme for a visit to Holland with which our Dutch colleagues responded to our inquiry early in 1928, left the Sub-Committee no ground for hesitating to make the Mental Hospitals of the Netherlands the object of their first study tour.

Nor did the call of the historic memories of mental medicine leave us in any doubt that we should select the hospitals and clinics of Paris for our second tour.

Our journey being direct, and one hotel sufficing for the entire period of our stay in France, we did not, on this occasion, seek the help of a travel agency. Dr. Targowla, a corresponding member of our Association, was kind enough to find the party a comfortable hotel, well within its means, and much less expensive than its equivalent at home. Both he and Dr. Henri Colin, an honorary member of the Association, set in motion the official processes which procured our invitation and M. Chaudet's welcome provision of a private municipal 'bus for our daily journeys.

The well-being of the writer having been threatened by his exhausted fellow-travellers after their strenuous days in Holland, he took the precaution of dropping Dr. Targowla a hint that in Paris the members of the party would expect frequent half-holidays—a hint which was not forgotten either in his time-table or by those who were so kind as to conduct us through the hospitals.

Our party numbered nine only, a figure for which the recent French Vaccination Order was in some measure responsible. We crossed the Channel on Sunday, June 2, one member making his passage by air and the others by water.

Dr. Targowla had provided us previously with notes on French Lunacy Law and Procedure, particularly with reference to its application in the Department of the Seine, whose Council controls the public mental hospitals of Paris. As these notes present, in a concise form, an account of the methods of admission of patients, they are quoted at length below.

The French Lunacy Act of June 30, 1838, provides for two modes of procedure for admission to asylums:

(*a*) Voluntary.
(*b*) On certificate.

Voluntary admission requires:

1. A request for admission signed by some person, *e.g.*, relative or friend.
2. The identification documents of the person who makes the request and of the patient.
3. A medical certificate signed by a doctor (in cases of urgency the certificate is not indispensable for the public asylums, but in Paris it is always required).

The law of 1898 regarding the compulsory medical relief places the cost of treatment on the departments (counties) and townships, and, to that end, defines the place of settlement for at least a year. As a result, certain counties accept for voluntary admission only those patients who can defray the cost. In Paris this method of admission is applicable only to patients whose place of settlement is the Seine Department.

Admission on certificate applies particularly to individuals "liable to make a public disturbance or dangerous to public safety."

A reception order is made by the Prefect of Police in Paris on the information of the commissaries of police; they step in when a danger is pointed out to them by "common report" or by a medical certificate.

It is the practice for alleged patients to be sent to the special infirmary of the Prefecture of Police, to which are attached two alienists; they make their examination, and if mental disorder is diagnosed, a certificate is signed by the Prefect of Police ordering confinement.

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Patients are then conveyed to the admission department of Sainte Anne, where the voluntary patients also go. If they are considered mental cases, a new certificate is made out by the senior physician. This department may retain certain patients, but its function is to distribute them to the various county asylums; in preference, acute cases are placed in the admission departments of the St. Anne Asylum and of the Villejuif Asylum, and chronic cases in the other asylums (Ville Evrard, Maison Blanche, Vaucluse, Moisselles).

On their arrival at one of these institutions the patients are again certified, and a second certificate is made out fifteen days later indicating that the patient ought to be retained. These certificates and the documents authorizing confinement are forwarded to the Prefect, who informs the Procureur of the Republic (the Public Prosecutor). Further, all certificates are copied in the Statutory Register, and every month a note of the condition of the patients is there entered.

This register must be submitted to all administrative and legal authorities who have the duty of visiting the asylum. Once every six months the Procureur visits the institution and interviews the patients. In addition, a statement is sent every six months to the Prefect conveying the opinion of the senior physician and of the inspecting physician. The Prefect decides as to detention or discharge of the patient.

In the case of voluntary patients discharge is allowed forthwith on the certificate of the senior physician affirming the recovery, or on the petition of the patient's family or of the person who requested his admission, even though the patient has not recovered.

In the case of statutory certification discharge is proposed by the senior physician and authorized by the Prefect of Police. It may chance that from police considerations the Prefect will decline to discharge in spite of the medical opinion.

For several years, in addition to the St. Anne Asylum, the psychiatric hospital of Henri Rouselle has been in use; patients enter and leave freely, without any legal formality. It retains no patients in confinement. Chronic, violent or dangerous patients are admitted in the regular way (voluntary or on certificate) and removed to the Reception Ward of St. Anne. Protesting patients are either set at liberty, or confined according to the needs of the case. This is a hospital for observation and treatment without confinement.

For children there is a dispensary, an annexe of the Faculty of Medicine, which functions as a hospital. The juvenile patients (confined on certificate or voluntarily) are sent either to the Hospice de Bicêtre (Fondation Vallée) or to the Vaucluse Asylum.

The Annual Report on the Asylums of the Department of the Seine for the year 1927 states that the number of patients at the end of that year was 9,181. Including the patients boarded in provincial asylums, the total reached 14,502—a figure equivalent to 1 in about 300 of the population of the Department of the Seine. Men formed 34·5% of this total and women 65·5%. Admissions to the asylums of the Seine during 1927 were 3,898, of which 36·4% were on the voluntary basis.

The proportion of this number which is quoted as discharged cured is 45·6%. Including those discharged relieved the percentage is 62·6.

The death-rate for the year was 123 per 1,000 of the patients remaining on December 31.

International Congress of Mental Hygiene.

June 3.—The Infirmerie Spéciale of the Prefecture of Police was the first institution on our programme. The International Congress of Mental Hygiene, however, held its meetings on the day allotted to this visit, and we were kindly invited to attend its sessions at the Henri Rouselle Hospital and the Palais Royal. Our programme was in consequence altered, and the visit to the Infirmerie Spéciale was postponed until the following day.

At the Congress, papers were read by delegates from Hungary and Czecho-Slovakia, and Dr. Archdale, who was called upon at short notice to represent our Association, gave some particulars of the work of the clinic associated for some years with the Sunderland Mental Hospital.

The Commissioner for the Affairs of Mental Patients in Hungary, Mr. Gustav Olah, related the inauguration in that country of a League of Mental Hygiene, and the building of a new department (on the open system of the Henri Rouselle Hospital) in the grounds of Lipotmezoe, the State Hospital for Nervous and Mental

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Patients. He stated that popular lectures were held by asylum physicians for the dissemination of mental prophylaxis, and that the after-care of discharged patients was carried out by ladies of their Red Cross Society, with the assistance, where required, of specially selected physicians. In the town of Györ a union of the sections for nervous and for mental diseases had been brought about with the object of improving facilities for early treatment.

The delegate for Czecho-Slovakia related in his paper the numerous endeavours made in recent years for the advancement of eugenic principles to ensure mental health and prevent physical and mental degeneracy.

Probably the most important contribution to the Congress was a report by Dr. Toulouse and Dr. Dupouy on proposals for fresh legislation in the care of the mentally afflicted.

The report envisages a control and coordination by the State of all the activities and agencies of the Departments (counties) supporting the movement for mental prophylaxis and the formation of an Advisory National Council to assist the Government in this enterprise.

A National Institute is contemplated for training and research, to be associated with the University of Paris.

Each Department of France, under this *régime*, would possess a centre for psychiatry and mental prophylaxis with the following units:

1. A dispensary.
2. A psychiatric hospital of two sections:
   (*a*) For observation of all classes of insane patients who may be dangerous.
   (*b*) For the treatment of harmless patients, acute or long-standing cases, amenable to curative measures.
3. Hospice or Colony accommodation for the incurable or feeble-minded, on open-door principles.
4. A psychiatric home for the confinement of dangerous patients and those for whom segregation is imperative.
5. A special establishment, which may be a section of (4), for anti-social or criminal patients.

The Departmental Council would also be responsible for Research Laboratory and School for Mental Prophylaxis.

The report gives in detail the functions of these respective units and procedure for securing legal authority for "placing under observation" patients suspected of mental disorder and anti-social acts who are unwilling to accept treatment.

Home treatment with money payments is provided for. Particular attention is given to the selection of employment at the outset of a person's career or after a mental breakdown for successful re-adaptation to social demands.

The promoters of the scheme would like to charge the Dispensary also with advisory functions relating to marriage and eugenics, delinquency, prostitution, vagrancy, immigration and propagandism.

Provision is made for the protection of patients' private interests and property, and for the financial control of the centres.

Admission to private asylums is to be either (*a*) voluntary, or, in the case of (*b*), patients "placed under observation," a request must be made to the Prefect by the medical officer of the establishment with the consent of the medical inspector of the Department.

L'Infirmerie Spéciale.

June 4.—The Special Infirmary, founded in 1850, is a low block within the court-yard of the Prefecture buildings in the island of a Cité. The patients' quarters consist of 20 single rooms with concrete floors, the corners of which are rounded; the windows are strongly guarded, and the sanitary convenience is a fixture in a corner of the room; the door has a small aperture instead of a window. Half these quarters are for men and half for women; one room in each section is padded with stout canvas panels.

Each patient is thus entirely isolated during his short stay here, 70% of the patients remaining less than 24 hours; a few may remain as long as four days.

Admissions number about ten a day; 400 prisoners are admitted for special observation during the year, half of whom are usually found to be malingerers. In these cases the period of stay may extend into weeks. Foreigners constitute about 7% of the admissions.

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The Infirmerie is the single portal through which pass all insane patients regarding whom the police have had to take action, with or without medical advice. The system has the great advantage of providing a dossier in each case which is available on any readmission, and is kept up-to-date with information of a patient's transfer, discharge or death in any of the hospitals to which he is sent. We saw several dossiers of alcoholic patients who had been repeatedly to the Infirmerie, the particulars recorded being ample and readily available.

The medical staff of the Infirmerie consists of two specialists in psychiatry—Dr. Clerambaut, who has served thirty years here, and Dr. Heuyer, of the Faculty of Medicine of the University of Paris. They visit twice a day. There are two men and two women nurses always on duty for 24 hours continuously; they then go off duty for two days.

Admission to the Infirmerie Spéciale is on the order of the Prefect of Police, who is notified of the discharge of each patient or of the need for asylum care; in the latter case a further order accompanies the medical certificate of the Infirmerie physician. These documents are valid for fifteen days' detention, and the patient is removed to the Asile Ste. Anne.

Although the quarters at the Infirmerie Spéciale look uninviting and rather gloomy, it has to be remembered that the stay is only for a few hours. No patient comes into contact with another. This single portal provides a single and complete dossier of great value to the physician in deciding as to the disposal of the patient. It is, in this respect, in considerable contrast to the Metropolitan Poor Law methods.

L'Asile Ste. Anne.

June 5.—We visited, with Dr. Targowla, the Asile Ste. Anne in the Rue Cabanis, built in 1862.

It comprises several units, indicated below, and in the same grounds are the buildings of the Henri Rouselle Hospital for uncertified patients.

The following table shows the distribution of the sections:

	Patients. M.	F.	Medical Staff.
L'Admission (or Admission Hospital)	40	40	1 Médecin Chef. 2 Internes
(University) Clinique	120	120	1 Professor. 4 Chefs de clinique. 2 Internes.
Ste. Anne — 1st Section	216	177	1 Médecin Chef. 2 Internes.
Ste. Anne — 2nd Section	216	177	Do.
	592	514	
	1106		

The Institution is under the management of a lay director, and each section has a médecin chef of considerable experience, who is assisted by two residents of a few years' standing.

The admissions number 4,000 a year, about 1,800 men and 2,200 women; 75% of the patients come through the Infirmerie Spéciale, and all are from the Department of the Seine. They are thence distributed to other sections of Ste. Anne and other asylums.

The wards are lofty, fairly spacious and rectangular, with good cross lighting and ventilation. As a rule the ground floor has a wide balcony on the south wall in the closed garden, but it is not the practice for patients to use the garden unless they can walk.

In the male admission block we saw a ward of 56 recent cases where the nursing staff numbered 31. Several small wards contained two beds. The previous heating by hot air has been replaced by hot-water pipes well screened. Much use is made of "somnifen," but not after the intense method of its inventor, Dr. Kläsi; it is given for about a fortnight, but intermittently after the fourth or fifth day, and is administered intra-muscularly.

A certificate is usually written by the médecin chef of this admission block two days after the patient's arrival, and according to the nature of the case, the patient is passed on to another section or another asylum.

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Imbeciles as well as patients with mental disorder are dealt with under the same enactments, so it was not surprising to find little boys among the men.

This, however, was only among the admission group, who pass on in a few days. Most of the patients in this section were confined to bed, and we saw very little excitement of a turbulent character.

Visiting sample wards of one of the sections (216 male and 177 female beds), we saw a male ward of 24 beds with 11 nurses for the 24 hours. It was principally devoted to organic mental disease; another small ward contained chiefly cases of general paralysis, complete records of which were demonstrated by Dr. Le Roy, who is in charge of this section; he is a contributor to the *Journal of Mental Science*.

The male nurses take meals in the same refectory with the patients who are up and about.

The sleeves of restless patients are not infrequently tied to the bedstead, and in a female ward we saw acutely suicidal patients wearing a strong combination garment, the ankles of which were fastened loosely but effectively to the lower end of the bed. Such restraint is carried out under medical prescription and is registered.

We saw a female acute ward of 10 beds with a single room in each of the four corners. There were 6 nurses for the 24 hours for the 14 patients, and the working week consists of 48 hours. The day quarters adjoining this ward were very clean and furnished with pleasant-looking, though large cupboards, tables and benches. There were some useful ward trolleys lined with lead. Most of the women who were up were busy on the verandah, cleaning vegetables.

We could not learn that any special mental or occupational therapy was carried out here.

While the wards are of a useful design, the sanitary conveniences are not detached as in our sanitary spurs; there was a noticeable difference in the smart appearance of the men's and women's wards which we visited.

All the major surgical and obstetric treatment of the Paris Asylums is carried out in the Surgical Pavilion of Ste. Anne. It contains two surgical and one obstetric theatres and the patients are accommodated in small wards of 5 or 6 beds. The doors are kept locked, but the nurses obtain a clear view of the wards from the wide corridor through the large glass partitions. Two surgeons are employed; the operations average 350 a year. The nurses are trained in the hospitals of the Department.

It would appear that the clinical research work of each section of the hospital is carried out within the section itself, and not in a general laboratory.

The Hôpital Henri Rouselle was visited on June 6. It contains in its four pavilions 81 beds for men and 101 beds for women, who are admitted, as to a general hospital, without certificates or orders. It has also an out-patient department and a special one for children.

The story of the development of a hospital of this special type is to be gathered from the several books descriptive of the "service ouvert," from the industrious pen of the Director, Dr. Toulouse.

As far back as the eighteenth century curable and non-dangerous lunatics were received for treatment and observation in various Paris hospitals, particularly Hotel Dieu, and this practice remains to the present there, as in other institutions which receive the mentally afflicted on an open basis. Such institutions, however, lack specialized means of treatment; they do not receive or retain all and sundry of the mental sick; any calling for special nursing are removed to the asylums or to the Henri Rouselle Hospital.

In 1899 Dr. Toulouse set aside in his hospital an "open" ward for those patients who did not need confinement. They were able to come and go, follow their occupation, and obtain their discharge on request

Dupré, in 1904, and Gilbert Ballet in 1914, as well as Régis of Bordeaux, urged a definite separation of curable psychopaths, who could be treated on the open system, from the other patients whose condition demanded the adoption of measures to prevent them from injuring themselves or others.

In 1918 Dr. Toulouse brought about the creation of the Committee of Mental Hygiene by the Ministry of Hygiene, and in 1920, together with Dr. Genil-Perrin, the establishment of the French League of Mental Hygiene, similar associations being promoted throughout the provinces.

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The League, on the initiative of Dr. Toulouse, induced M. Henri Rouselle to investigate the need for the establishment of a hospital on the open-door principle. On his recommendation M. Brunet proposed it, and a centre for psychiatry and mental prophylaxis was founded by the Conseil-Général and the Administration of the Department of the Seine in 1921, the Henri Rouselle Hospital being the principal unit.

Unlike similar foundations for early treatment of mental disorder in other countries, this hospital receives patients without any formalities whatever from every part of the country and of any nationality. Later, steps are taken to obtain the cost of his stay in hospital, but his admission is not delayed by any preliminary formalities. The doctor decides if the case is one for admission, and that suffices to open the door to the patient.

The Paris Centre for Mental Prophylaxis comprises:

1. A central dispensary for the examination, classification and treatment of patients.
2. A mental hospital for the observation and treatment of patients requiring continuous care.
3. A social service to follow up the patients attending the dispensary or those discharged from hospital if they so desire.
4. A department for home visitation by assistants specially trained for this duty.
5. Laboratories for examination and research.
6. An institute of psychiatry and mental prophylaxis.
7. A school of mental prophylaxis for training those engaged in the various departments of practical psychiatry.

The dispensary consultations since 1922 are shown in the following table; they take place twice daily as well as on Saturdays from 5 to 7 p.m.:

	New patients.	Total.	Medical home visits.
1922	1,848	3,289	..
1923	3,043	8,267	..
1924	3,201	9,601	..
1925	3,255	10,428	84
1926	3,263	11,144	107
1927	3,479	11,960	153
1928	4,836	13,382	213

All the patients undergo a series of examinations into their physical and mental state. Advice and medicine may be given gratuitously.

The hospital is divided into three sections:

(*a*) *Observation*—usually over a period of several days.
(*b*) *Treatment*—which may be extended to 4 or 5 months.
(*c*) *Research*.

The medical staff assisting Dr. Toulouse are Drs. Targowla, Badonnel, Chatagnon, Courtois.

The various pavilions with the nursing and ward staff are shown below:

Male.	Beds.	Matron.	Nurses.	Ward maids or male attendants.	Night staff.
Pavilion Esquirol	36	1	2	5	2
,, des Perches	45	1	4	7	4
Female.					
Pavilion Ferrus	65	1	5	12	4
,, Morel	36	1	2	4	2
	182	4*	13	28	12†

The buildings also contain a lecture-room and numerous consulting-rooms for the dispensary or out-patient department, as well as a registry. One smaller room in the same corridor was equipped for obtaining serological specimens;

* And a general matron.
† And a general night superintendent.

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samples were being taken from small children by dry-cupping the back and scarifying the hæmatoma thus raised. We saw sterile needles, in tubes, with a very convenient flat grip near the centre.

As in other French hospitals, there are several two-bed rooms for patients; Dr. Toulouse desired to provide each patient with a single room, but the expense of securing undisturbed rest at night in this way proved considerable.

The doors are largely of glass, and these and the windows are prettily curtained. In the women's pavilions the entire wall of the "salle de repos" above the height of 3 ft. is decorated to represent landscapes. Coloured basket chairs and small tables, with provision for music and games, and the airy brightness of the quarters render them very attractive-looking, but beyond the daily work of the ward, and needlework, no employments of a therapeutic kind are provided.

The second floor of the Pavilion Ferrus is largely devoted to those patients whose removal to an asylum is required; a table below indicates the number removed for voluntary admission and those admitted on a Prefect's order, the latter being largely in the minority:

	d'Office.	Voluntary.	Total.	Percentage of new consultations.
1925	259	604	863	26·4
1926	266	596	862	26·4
1927	313	610	923	26·5
1928	444	794	1238	25·6

This table shows that 1 in 4 of the new patients is passed on ultimately to the asylum.

Single rooms are required for certain patients, and these are well lighted and a little more spacious than our own and the doors are much more liberally glazed.

Rooms, whether for day or night purposes, are not constructed for more than about a dozen to eighteen patients in each.

No special provision is made for exit in case of fire from the upper floors.

X-rays are used mainly for examination of the alimentary canal. There is a chemical as well as a serological laboratory; the assistant in the latter informed us that about 25% of the serum examinations were positive for syphilis.

The physiological laboratories are at the top of the Pavilion Ferrus; the investigations at present in progress are mainly on neuro-muscular problems, such as fatigue.

Associated with the hospital is a University clinic under the direction of Prof. Claude, for the instruction of students in psychiatry.

The laboratories of the Centre are concerned also with the problems of industrial psychology. This has resulted so far in a reduction of 20% in the accidents in the case of the Transport Company of Paris.

Dr. Toulouse was kind enough to furnish me with a copy of the patients' menu of the previous week, which is reproduced below.

The food looked very appetising here as in the other asylums, and fresh fruit was much in evidence. Decanters of a red fruit juice are usually to be seen on the dinner tables.

The cooking for this hospital is separate from that of the adjoining Asile St. Anne, and Dr. Toulouse would like to see it entirely in the hands of an outside catering firm.

The cost of maintenance is 32 francs a day, *i.e.*, about 5*s.* 2*d.*

HÔPITAL HENRI ROUSELLE.

Menu des malades. 1929.

Le Matin—Soupe maigre.

Mois de mai, Jours.		Déjeuner.	Dîner.
Lundi	27	Bœuf garni Lentilles au lard Dessert	Soupe maigre. Haricots rouges. Fromage.
Mardi	28	Triperie Nouilles milanaise Dessert	Potage aux pâtes. Bœuf grossel. Pommes purée. Biscuits.

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Mois de mai. Jours.		Déjeuner.	Dîner.
Mercredi	29	Veau rôti Salade Dessert	Soupe maigre. Purée de pois. Fruits frais.
Jeudi	30	Charcuterie Haricots blancs Dessert	Potage tapioca. Bœuf cornichom. Riz au gras. Confiture.
Vendredi	31	Poisson frais Pommes anglaise Dessert	Soupe maigre. Bœuf maigre. Lentilles au jus. Pruneaux.
Mois de juin.			
Samedi	1	Mouton rôti ou ragout Haricots blancs Dessert	Soupe maigre. Macaroni italienne. Figues.
Dimanche	2	Bœuf mode ou lapin (6ème femmes) Pommes nouvelles Dessert	Potage vermicelle. Haricots rouges. Fruits frais.

Le Patronage de l'Enfance.

June 7.—We were taken to the Patronage de l'Enfance, 379, Rue de Vaugirard, founded in 1890 by M. Henri Rollet, at that time Advocate in the Court of Appeal of Paris, and since 1914 Judge in the Children's Court of the Department of the Seine.

The objects of the Patronage are: The protection of orphans or children in moral danger, in wretched surroundings, or in the hands of incapable parents, and of children brought before the Courts for offences.

It is not a penitentiary, and does not attempt to assume the functions of such. It takes a permanent interest in its protégés, and invites them to appeal to it when in trouble, and to regard it as a permanent second home.

Its principal *rôle* is the care of boys, but cases from the courts are received up to 18, and no refusals are made on the grounds of creed or nationality.

Previous to 1890 M. Rollet had been general secretary of the Society for the Rescue of Children, which had declined to extend its activities beyond helping children brought before the Courts. This limited object did not satisfy the more comprehensive public spirit of M. Rollet, hence the founding of the Patronage.

Its first appearance was modest indeed, and dependent upon the personal resources of M. Rollet, assisted the following year by Mme. Rollet (Renée Janet). It acquired some legal recognition in the form of a Ministerial Order, but it had no other home than that of the Founder, and his landlord soon took exception to the presence of the riff-raff of Paris under his roof.

M. Lépine, the Prefect of Police, came to the rescue with the offer of premises in the Palais de Justice and M. Rollet thought he had reached port, but he had reckoned without the architect and the protests of certain folk against what they regarded as sordid surroundings. This resulted in the Patronage again finding itself in the street. From this dilemma it was rescued by the offer of a shop in the Rue de l'Ancienne Comédie by Mme. la Baronne Thénard, which afforded a roof for the daytime under which occupations for the children were organized, such as making paper fire-lighters from old newspapers and railway tickets given by friends. This shop, however, provided only day quarters, with no night shelter, but M. Rollet presently obtained some land, and the necessary tentage was supplied by the Minister for War. When the winter arrived it was necessary to find other quarters, and ultimately a portion of another Patronage in the Rue de Vaugirard, under the management of M. l'Abbé de Pitray, was offered, but the outcry of the parents of his pupils dreading contact with the unfortunate or convicted protégés of M. Rollet compelled a further move, and temporary lodgings in a house in Rue Garanciére were offered by Mme. la Comtesse de Madre.

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These sufficed till 1898, when a group of ladies under the direction of the Comtesse de Flevigny secured premises at 149, Rue de Rennes, large enough to arrange for a dormitory and a refectory, the office and the workshop remaining in the premises in Rue de l'Ancienne Comédie. A Dominican Order provided the cooking, clothing and nursing services as well as the oversight of the occupations.

The Patronage received the recognition of the French Academy in 1909, and the following year a bequest of one of its benefactors, Mlle. Morlot, of about 4,000 pounds. That lady's nieces, however, prevented the realization of this bequest for many years on the grounds that the Patronage had not been acknowledged as an institution of public utility prior to the death of Mlle. Morlot.

When the Patronage was brought by M. Rollet to the notice of M. Rosenheim, the latter quickly decided that it should be endowed with a permanent and regular administration. He introduced to the Patronage his friend, M. Muller, who has thoroughly organized its house arrangements and finances.

From 1910 M. Paul Kahn, Advocate of the Court of Appeal, has co-ordinated the work of the Patronage with the needs of the Courts and the public authorities.

The present site of the institution was acquired by M. Rollet, who erected on it the building bearing his name; it was opened in July, 1913, by M. Poincaré, the President at that time.

An Act of 1898 authorized Courts to send to charitable institutions children who could not return to their own homes or be sent to a penal colony, as they appeared to be more unfortunate than vicious. A Court of the 8th Chamber came to be devoted to children's cases in which the Public Prosecutor took no proceedings, and an Act of 1906 allowed judges to determine that minors up to the age of 18 had acted "without discernment." In 1907, on the instigation of M. Clemenceau, then Minister of the Interior, it was decided, in order to remedy the inadequacy of the law of 1898, to make more use of Article 66, *i.e.*, postponing sentence pending a report on the minor's conduct in an institution to which he had been provisionally committed. From November, 1924, to May, 1925, 70% of the decisions of the Courts were reversed by the Court of Appeal of Paris, and in this way a large number of children were sent to institutions not of a penal character, some even going to their own homes.

The Patronage is at the disposal of all courts in France, particularly where no charitable institution is available. Thanks to the Government, the aid of the Pari-Mutuel has enabled the Patronage to erect a third Pavilion—opened by M. Millerand in 1923.

The Patronage is essentially an establishment which, in a thoroughly scientific manner, inquires into the cases of children brought to its notice by the Courts or by parents or schools, on account of some difficulty in management.

Suitable boys are placed in single care in the country, not more than one boy going to the same village. From the figures given below the proportion of mental defectives to the entire number dealt with will be seen.

The routine examination in each case includes inquiries by assistant medical officers into the following aspects:

Heredity.
Past history and early development.
School attainments.
Psychological—on the lines of Binet-Simon, Terman, Claparade, etc., and where indicated, psycho-analysis.
Physical—the special senses, neurological, serological.
Where the conditions call for it a visit by a social assistant to the pupil's home.

When, during the course of a week or more, the above examinations are completed, they are reviewed by Dr. Heuyer, the principal medical officer of the attached Neuro-Psychiatric Clinic, who is appointed also by the Courts to examine prisoners. He records his opinion and prognosis, giving directions for the future care of the pupil.

On our arrival at the Patronage Dr. Heuyer received us in his consulting-room, and explained the methods now being related; he showed us the quarters and the examining rooms; these latter are temporary, but extraordinarily well equipped and rendered clean in a surgical sense.

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There is accommodation for the prolonged observation of 96 patients, but at the moment the number of beds occupied is fewer than 50. There are dormitories of a square design with 24 beds, some of which contain also six single rooms and there is a sick bay of four beds. The observation dormitory has a duty room for the night nurse and a sleeping cubicle for a nurse. The day quarters include school rooms, workshop, refectories for younger and older pupils, and a playground which will presently be utilized for an additional pavilion.

The placing of boys in the provinces is carried out under a well-regulated system, each guardian entering into a contract in which his obligations are completely set forth and directions given for any circumstances that may arise. The object of the placing is to make a good citizen of the pupil. Till he is 13 he must attend school. After that age he is to take up some occupation. If at the age of 18 he is suitable for the Army he is allowed to enlist. Generally the criminal pupils are retained till the age of 21.

The placed pupils and their guardians are under the inspection of one of 15 delegates of the Patronage, an unpaid person usually of substantial position.

The manager of the Patronage is a layman.

In addition to Dr. Heuyer there are four doctors, including an ophthalmic surgeon and a laryngologist, as well as three psychological examiners and seven medical and psychological assistants. There are chaplains of the Roman Catholic Church, the Protestant and the Jewish faith.

The following tables explain much of the nature and scope of the work carried out by the Patronage.

In 1926 the classification of the pupils committed by the Courts to the Patronage was:

5·5% requiring hospital treatment, *e.g.*, tuberculosis, epilepsy.
5% insane, dementia præcox, encephalitis.
35% mentally defective } = 59%.
24% unstable }
17% perverts.
13% normal children perverted by social environment.

In October, 1926, the Patronage opened a neuro-psychiatric clinic or out-patient department of children. In the 1928 Annual Report 690 new cases are recorded; they were classified under the following headings:

5·8% epilepsy.
·7% dementia præcox.
2·2% epidemic encephalitis.
58·7% mentally defective { Idiots and imbeciles 7·1%. Feeble-minded, 17·5%. Feeble-minded with disorder of conduct, 34·1%.
11·6% conduct disorder without mental deficiency.
8·3% perverts.

Taking the mentally defective and unstable, the percentage is practically identical for both years and both groups.

Hereditary factors were found in 425, acquired infections and cranial injuries in 32, and exceptional social conditions in 10. Of the 425 with a hereditary ætiological factor, the varieties are stated below:

Congenital syphilis:	
Certain	83
Probable	90
Suspected	97
Psychopathic heredity	92
Alcoholic ,,	41
Tuberculous ,,	22

The following figures concern the hereditary factors in 100 cases of "pervers instinctifs":

Like heredity	32
Psychopathic heredity	6
Alcoholic ,,	8
Syphilitic ,,	18
Tuberculous ,,	6
Various and multiple hereditary factors	15
Heredity of no significance	15

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Dr. Heuyer regards "les pervers instinctifs" as abnormal children having such defects of character that they are unable to make the necessary moral adaptations to their social environment. They exhibit various types, but there is always an underlying disregard of family obligations and ties which develops into hatred of an impulsive type, and a desire to render evil for evil. It develops also instability and contributes to vagrancy, which, if a crime, is a minor one, but is at the root of many others. Hence he claims the need for examining the young vagrant. Indeed all the children in whom there is disordered conduct require a complete medico-psychological examination and an inquiry into their environment. They should be separated from the normal before decisions are taken as to their future care. The same remedy will not do for the pervert due to bad social environment as for the mentally defective or congenital pervert; the former can be taken into the Patronage and subsequently placed in a rural family; the mentally defective requires to go to a residential school, of which there are at present far too few in France. For the congenital perverts a reformatory is needed. He claims it is a mistake to place such children in a rural family. They should be prevented from becoming free agents at the age of 21, at a time when they are the most likely to marry. In order, however, to secure this end fresh legislation will be required.

From the Annual Report, the statistics for January 1, 1928, show that during the previous year the Patronage as a whole had dealt with 2,262 fresh cases and 2,064 old ones; 1,801 from both groups appear to have been "placed" and 2,063 returned to their own families or countries.

The expenses of the Patronage are about £6,000 a year. The cost of each pupil here is 16–18 francs a day, *i.e.*, 3*s*.

A scale of pay is drawn up for the placed pupils, together with pocket-money; the latter commences at 2 francs a week for a boy of 13, and rises to 8 francs for a boy of 19–21. The pay in cases of "placement agricole" rises from 480 francs a year for a boy of 13 to 2,100 francs for one of 19–21, but as age is only one indication of physical power, a boy of 17 and poor physique may be classed in the 15-year group, and in the case of abnormal boys the salary is only fixed after an individual examination.

We see in the Patronage an institution which endeavours to place all unfortunate children on right lines for their future development, whether normal or abnormal, intelligent or defective; but before embarking its protégés on their new life it puts them through a complete physical and mental examination, taking their history and environment into account, and in this way the medical staff is in full possession of the facts before proceeding to advise on a remedy.

L'Asile de Villejuif.

June 8.—L'Asile de Villejuif, about five miles from the centre of the city, on the southern outskirts, was built in the early 'eighties, and has beds for 1,500 patients, of whom about 700 are women.

The party was here met by Dr. Colin, who was so good as to spend the morning with us.

The male and female sections of the hospital each consist of a series of parallel blocks of two floors, the intervening ground being walled in to form square gardens, each occupying about four times the area of its ward, and enjoying the ample shade of trees. A broad verandah extends the entire length of the south wall of each block, and the patients evidently make good use of it.

The wards are broad and rectangular, well lighted by large windows on each of its long sides.

The floors are stained and polished, are of a light colour, and their cleanliness is obvious. There are spacious day-rooms, for the few who desire to occupy themselves in needlework, and some of these rooms are well supplied with comfortable chairs and wall pictures. Wash-basins are fixed within the dormitories, and minor or special cooking is done, as at a grill, within the ward dining-room. Eggs were put out for several patients who did not desire meat, and their omelettes would presently be prepared on the spot.

Corridors are out of doors, and do not in this way, like some of our galleries, interfere with the cross-lighting and ventilation of the wards.

The provision originally intended for night space was fairly generous, 80 sq. ft. per bed, 16 ft. being allowed for day space, independently of the dining-room;

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the total was about 107 sq. ft. Each block was intended to hold about 70 beds, 52 of which were on the first floor. The stairs and offices are in the centre of the block.

A large number of frail, senile and idiot patients are nursed in bed for a large part of the day. Those with faulty habits usually remain permanently in bed, where extensive precautions are taken with layers of waterproof sheeting to preserve the bedding.

The acute ward is well provided with single rooms nearly twice the size of those in England, and much more freely glazed, but a naked patient may still be seen with a bedding of loose straw. Women's strong clothes take the form of pyjamas.

The female section of some 700 patients has a staff of 177 nurses (*i.e.*, one nurse to 4 patients). They work for eight-hour periods.

The kitchen contains a large central coal range and several steam cookers. No patients are employed here.

A liberal use is made of chloride of lime in the cleansing of this building, particularly for the tables and benches.

The daily meat ration is 5½ oz. for men and 4½ oz. for women. The menu for to-day's dinner was "soupe, légumes, confiture ou dessert."

There are several metal baths in the acute wards, but the bathing of other patients is conducted in the large bath-house near the main kitchen.

The pharmaceutical laboratory of a French hospital figures much more prominently than the dispensary in England, considerably more preparation of drugs being made.

A pathological laboratory is fitted up in the same building, but much of this work is conducted here, as in other asylums, in the more private laboratory of the sections, of which there are five at Villejuif, each under the charge of a médecin en chef of considerable experience, with the assistance of an "interne," the latter usually qualified about two years before appointment.

The entire institution is under the control of a lay director—a system obtaining largely in France.

The Criminal Section.

In an illuminating monograph Dr. Colin discusses the reasons which led him to urge the erection of these quarters. He describes two classes of troublesome patients:

1. The vicious, insufferable exploiters of asylums.
2. The criminal lunatics, unstable, epileptic or moral imbecile.

The first group comprises those difficult insane whom some call vagabonds and criminals. They are a tedious element even in prisons, and their incorrigible ways render them unsuitable for detention in an asylum. Realizing that they lack ability to tolerate alcohol, they make use of the fact to obtain arrest and avoid adaptation to life and the rigors of winter, secure in the knowledge that the production of their original certificate of discharge from an asylum will prove a ready passport to the Infirmerie Spéciale.

His description of these unstable people—often former residents of a defective colony—corresponds largely with the type known to us as the high-grade feeble-minded delinquent. In some aspects it resembles the hypomaniac who trades on his legal irresponsibility. Once within the asylum such patients soon seek the profitable occupations where they, sooner or later, become insufferable both to other patients and staff, cheating the former of their little presents left by visitors. They provoke trouble and discord, organize plots and calumnies, and in due time make insistent demands for discharge.

Some 200 of these patients, improperly accommodated either in the prisons or asylums of that time, were known to Dr. Colin and his colleagues in the Department of the Seine. It was his desire to provide separate quarters for them, where they would have employment, organized in every detail and be under constant supervision and medical oversight.

The vote of the Conseil-General, however, decided that the new buildings must receive patients of both groups.

Two blocks for male criminal patients were opened on March 3, 1910, with the arrival of what was described to us as "55 Sinisters." The number was raised to 64 in January, 1912, when nine of the resident attendants removed to quarters outside the institution.

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Each patient is provided with a single room, and several industries afford adequate occupation, *e.g.*, book-binding, chair-caning, machine knitting, boot and slipper making.

A standing order forbids two patients working together; there must be either one or three, by way of diminishing opportunities for conspiracy. No patients of this section are employed on the land, of which this institution has but little to spare for agricultural uses; garden supplies are contributed mainly from the more rurally situated asylums of the Paris group.

The beds of the criminal patients are fixtures, as are the tables and benches in the dining-room, and are so designed as to frustrate attempts to conceal knives and forks.

Dr. Colin has designed a special pattern of low bedstead with broad flat springs to support the mattress. In the workshop the tools, at the close of work hours, are placed in racks on the walls, where they form a pattern which renders conspicuous the absence of any one tool.

The single rooms are large and have alternative exits to the corridor and to the garden; on the first floor they can be opened on to a balcony which the architect insisted on providing, but which the patients are never permitted to use.

The windows of these single rooms and the workshops are narrow but open on a central pivot parallel to their long sides—a device which yields the maximum of ventilation.

The gardens are enclosed by high, close-meshed wire fences, in places surmounted by large sheets of armoured glass. At the bases of fences and walls pretty flower-beds are expected in some measure to deter escape. Beyond these fences, the boundary wall near this section consists of a formidable structure some 16 to 18 ft. high, rising out of a deep trench.

Maison Blanche.

June 10.—Maison Blanche was opened in 1900 for women patients only, and stands beyond the suburb of Neuilly sur Marne, about ten miles from Paris. The accommodation is for 1,570, but there are now 1,700 actually resident. The nurses number 400 and the principal medical officers 4, assisted by 4 internes. A dentist visits for one day every six months. A lay director is in charge who had nothing but ridicule for the "service ouvert" of the Hôpital Henri Rouselle, and was at pains to contrast the saving of labour in distributing stores and meals to the parallel blocks built on the older asylum design, compared with the toilsome distribution in the pavilion system. There are broad roadways between these wards, but the blocks of the older type to the east are connected by a roofed open corridor.

The modern pavilion is L-shaped in general plan with a square day-room protruding outwards from the angle. In the angle itself are a spacious vestibule and cloak-room.

Down one wing is a passage with single rooms right and left; some have unbreakable glass. There is a dormitory of 12 beds at the end.

The other wing contains a passage with offices, including a clinical examination room, bath-room, surgery and a dormitory of about 20 beds at the end. Ablutions are carried on in the ward, and a w.c. is available within the ward for patients under the constant observation of the nurse on duty. The accommodation is bright and airy, and the windows are curtained. Each pavilion has about 70 beds, and during the daytime there is a minimum staff of six nurses. This section of 420 beds has a staff of 94.

In the infirmary ward for recent patients there were 12 nurses to 60 patients, 2 nurses being on duty at night.

The pavilions have fenced airing-courts which present a more open appearance than many of the others we had seen in older buildings.

In the East Section (of parallel blocks) the gardens of two wards meet, and are separated by a very high open iron fence.

The light oak stained tables, benches, presses and floors in the day-rooms give a pleasing effect, and seem to lessen the need for decorations.

Apart from these blocks is one with about 18 single rooms for noisy and excited patients. Some of them to-day were undergoing continuous bath treatment for excitement, in the special room containing six baths regulated by one set of taps.

A commendable feature of the single rooms was a direct opening to the airing-court as well as to the broad corridor.

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A padded-room has panels of oiled canvas, as in some of our older poor-law institutions.

Nurses in this ward are strictly enjoined to wear a head-gear to prevent the hair being seized by patients.

No patients are employed in the central kitchen.

There are no occupations of a therapeutic kind beyond the ordinary necessary services, *e.g.*, the laundry, house and needlework.

About 50 patients a year are transferred to colonies where industries are carried on.

The maintenance rate, under 20 francs a day (or 22*s.* 6*d.* a week), is said to be the lowest among the Paris asylums.

Dr. Dove Cormac has kindly provided notes elaborated by Mr. K. Kelly, which he obtained at Maison Blanche, of a process for making an impervious flooring.

Composition Floors consisting of Sawdust, Magnesite and Magnesium Chloride.

Magnesium chloride (about 9*s.* 6*d.* per cwt.) is solid like rock salt, and has to be reduced to a liquid by heat. In the melted state its specific gravity is about 1300; 1 cwt. of solid will produce about 10 gallons of liquid.

For mixing with magnesite and sawdust it should be reduced to a specific gravity of 1150 with water, as tested with a hydrometer; a raw potato is about this gravity.

It will be found that equal parts of neat liquid and water give a specific gravity of 1100. With more water it will take a longer time to set; less water will hasten its hardening qualities. The process when carried out during the winter takes longer in drying and a stronger liquid should be used. In warm weather a weak liquid is advisable.

All surfaces treated with this composition must be free from all moisture, whether the surface be stone, brick, concrete or wood, previously brushed clear of dust, and then wetted with the neat liquid of a specific gravity of 1300, to give a key to the surface which is being covered.

Magnesite, which costs about 14*s.* 9*d.* per cwt., is in powder form, like plaster of Paris; it is mixed with the sawdust in the proportion of four parts of sawdust to one part of magnesite.

Sawdust from deal or pitch pine is the most suitable. Hardwood sawdust such as oak, ash or elm, should be avoided. Wood-dust is manufactured specially for this purpose; it is, however, more expensive.

Colouring matter of various shades can be used—red oxide of iron for red, yellow ochre for buff, oxide of manganese for black, yellow ochre and burnt sienna for brown colour.

The dry colours are mixed with the sawdust and magnesite in stronger shades than are ultimately desired as they will bleach on drying. The mixture is then wetted with the chloride and laid like cement.

To finish the floor, if the material is laid in two layers of a thickness of $\frac{3}{4}$ in. the first layer of $\frac{1}{2}$ in. can be laid without any colouring matter, and of a slightly weaker composition. When it is sufficiently set to be walked upon, and before it is hard, brush it over with the neat liquid to give a bite and lay on the remaining coat, trowelling off the surface with a very thin layer of magnesite and colouring matter only, without sawdust, well pressed into the face to close up the porous sawdust.

The approximate quantities for a 4 to 1 mixture are (1 cwt. of chloride liquefied yields 10 gallons, one of which when mixed with water and the other ingredients requires about 15 lb. of magnesite: Chloride $1\frac{1}{2}$ cwt., magnesite $1\frac{1}{2}$ cwt., sawdust 3 bags, red oxide $\frac{1}{4}$ cwt.). These quantities will cover 25 square yards $\frac{1}{2}$ in. thick. They cost respectively 14*s.* 3*d.*, £1 2*s.* $1\frac{1}{2}$*d.*, 1*s.* 6*d.*, 3*s.* 6*d.* That is £2 1*s.* $4\frac{1}{2}$*d.* for 25 yards, or 1*s.* 8*d.* per yard for materials providing a thickness of $\frac{1}{2}$ in.

Vaucluse.

June 11.—Vaucluse, near Epinay-sur-Orge, was the last hospital on our programme. It is fifteen miles out of Paris and our driver had not previously made the journey. Our late arrival was much bewailed by our host, the Director, for it left insufficient time for a complete visit to the mental hospital and the mental

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defectives colony before the elegant luncheon which the Committee had so generously provided in a manor house on the estate. This chateau retains many of the decorative features which adorned it in the eighteenth century.

Vaucluse is one of the older institutions, having been built sixty years ago. It stands on a terraced hill overlooking the valley in which is the farm colony for 250 mentally defective boys under the care of Dr. Simon, who, to our regret, was absent in Paris. The estate covers about 500 acres.

The accommodation of the asylum proper is 800 beds, 400 for each sex, but the number of patients provided for by the kitchen to-day is 1,260—including 270 boys in the Colony.

The wards are divided into rooms for 16 beds on the scale of 65 sq. ft. per bed. Along the south wall, as at Ste. Anne, there are wide stone verandahs overlooking pleasant though rather confined courts and gardens. The design of these wards, without interior corridors, provides for light and air, but the present overcrowding lessens these advantages.

Dangerous patients and some noisy ones are housed, as at Maison Blanche, in a separate building, with single rooms only, each having its own high-walled grassed yard, but owing to the slope of the ground, a fair view is obtained of the surrounding farm lands. Each single room has a w.c. in one corner, the flushing of which is controlled from the corridor.

This small block of nine rooms has three nurses during the day and one at night—a total staff of seven, including three chefs.

The entire staff of the institution, including 18 members of the administrative staff, is 419.

The chapel is now a cinema, where an entertainment is given every three weeks.

Although many of the organic cases are retained in the asylums nearer Paris, there was a considerable number of them at Vaucluse.

In one section—that of Dr. Genil Perrin—which contained 456 patients on January 1, there were 324 admitted during the previous year; 26 were discharged cured, and 68 relieved; 109 were transferred to provincial asylums, and 52 to other asylums of the Department of the Seine, and 8 were removed to foreign countries; 6 patients escaped, and 75 died, of whom 40 were cases of general paralysis of the insane, and 8 of tuberculosis.

In the general kitchen there are 5 cooks and 12 patients.

The kitchen copy of the menu, kindly given me by the Steward, contained the following:

ASILE DE VAUCLUSE.

Diet List for Tuesday, June 11, 1929.

	Early meal.	Second meal. Ordinary.	Third meal. Ordinary.
PATIENTS, 1,260:	Soupe aux lentilles	Mou et cœur en civet Macaroni Hne.	Soupe a l'oseille. Haricots rouges. Figues.
		Special.	Special.
		Panade aux œufs Macaroni Hne.	Soupe a l'oseille. Purée de Haricots. Figues cuites.
PERSONNEL, 419:	Lait café	Saumon Mou et cœur en civet Pommes nouvelles Confitures	Saumon. Mou et cœur en civet. Haricots rouges. Mendiants.
INTERNES, 5:	Lait café	Saumon Mou et cœur en civet Pommes nouvelles Confitures Crème	Potage sauté. Bœuf braisé. Petits pois. Fromage. Mendiants.

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The Nursing Staff in the Department of the Seine.

Until 1906 the training of nurses had for some time been modelled on the system of the general hospitals. Each asylum held courses of instruction, but the examiners belonged to the Asile Ste. Anne. The examination papers, distributed to the six institutions, were all sent to those headquarters for correction. One practical test only was included in the examination, namely on drugs, conducted by the senior dispenser at each asylum.

Experience has taught that the standard of education among the nurses was too low to display their knowledge in written papers.

After due consideration of special reports on the subject by Dr. Henri Colin, the Conseil-General approved of a new form of examination and a systematized course of instruction in :

1. Administration relating to—
   (*a*) Public assistance in general, and in particular, its application to the insane.
   (*b*) Asylums, admission, etc., patients' documents, reports, registers, relations with patients and doctors, medical and general services.
2. Anatomy, physiology and psychology.
3. Hygiene.
   Air, water, food, drink, personal cleanliness, clothing, exercise, rest, quarters, special hygiene affecting the sick and those about them, the bed, disinfection, isolation, etc.
4. Sick nursing.
   Surgical dressings, antiseptics, asepsis, accouchement, sterilization of instruments, preparation for surgical operations, care of the anæsthetized, care of patients' beds, of wounds, of scalds, of hæmorrhage. Hypodermic medication, thermometers (various). Counter-irritation. Venesection. Aspiration.
   Apparatus for fractures, dislocations, catheterization. Various forms of lavage. Dressings, etc., for special organs.
   Medical nursing, general and special, *e.g.*, respiratory, alimentary, cardiac, urinary, contagious.
5. Mental nursing.
   Various clinical forms of disease and their particular requirements, *e.g.*, suicide, comatose states, epilepsy, etc.; duties on admission. first fortnight, escapes, deaths, toilet, baths, diversions, etc.
6. Pharmacy.
   Various forms of external and internal medicaments.
   Dangerous drugs. Urine testing.

In each of these subjects there are written and oral examinations, the maximum for the former being 180, and for the oral 120 marks. In addition a practical examination is held in hygiene and nursing, for which a maximum of 60 marks is given.

Many members of the female staff of the asylums are married ; in some cases their husbands are also on the institution staff.

At Maison Blanche a crèche has been built for the children of the married nurses, too young to attend school.

Nurses' salaries are about 1,000 francs a month, which, at the current rate of exchange, is about £8.

In the Department of the Seine the interne (assistant medical officer) receives 12,000 to 14,000 francs a year, and the médecin en chef (or senior medical officer) 29,000 to 40,000 francs, or about £320 and quarters. He retires at the age of 65 on a pension of 75%.

In the provinces the doctors' salaries range from 28,000 to 36,000 francs.

Among the more striking impressions of the visit, which the courtesy of our colleagues in Paris enabled us to enjoy, may be summarized :

1. The single portal for all mental patients regarding whom the public authorities are obliged to take action.

The Infirmerie Spéciale, though unattractive and remote in appearance from a hospital, provides a brief isolation under trained observation, together with a complete individual dossier, always available. This observation is preliminary to one of several days at the clearing hospital of Ste. Anne.

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2. As designed, the wards of all the asylums were pleasing, well lighted and ventilated and generous in space, but much encroached upon in some cases by the increasing call for beds.

A separate building composed of single-room accommodation for noisy and dangerous patients is a feature of French mental hospitals which for several reasons we should probably not desire to introduce, but single rooms with an exit to a garden, which have already been erected in Britain, are well worth repeating.

As in Holland, more risks are taken with glass, particularly in single-room doors.

The ward gardens of the older institutions, though pleasantly shaded with foliage and broad verandahs, are rather confined and lack an outlook.

3. Lay directorship does not seem calculated to encourage initiative in the medical or social welfare of the patients or a co-ordinated research on the pathological side.

The excellent industries provided for the criminal patients at Villejuif have not been extended to the ordinary wards, where there would appear to be scope for them as occupational therapy.

4. The midday and evening meals correspond largely to our patients' dinners, and to the amplified breakfasts of recent years.

Vegetables figure prominently in the soups, but potatoes are served only once a week. The meat ration is good and fruit was much in evidence. As anticipated in a country where skilled attention is universally given to the preparation of food, the dietary was well chosen and the meals free from any suggestion of stodginess.

5. Mental prophylaxis has taken a firm hold in Paris, and if the legislative measures proposed by Dr. Toulouse and Dr. Dupouy are adopted, will constitute the pivot of future activity. The mental hospital will be but one unit in the scheme, which includes dispensaries, laboratories and social services such as after-care. Detention under certificate will be reserved for dangerous patients who are unwilling to remain under treatment.

At the Hôpital Henri Rouselle the fact is appreciated that one does not get rid of insanity by calling it neurasthenia, and that provision has to be made for it, in some cases, in institutions of another type. One in four of the new patients attending the dispensary or hospital is passed on to one of the asylums of the Seine, but it is observed that the greater number of them are transferred on a basis, voluntary as far as the patient's family is concerned, and unaccompanied by the Prefect's order. In these cases discharge is much the same as in the case of private patients in England.

6. A further instance of the application of the idea of prophylaxis is to be seen in the work of the Patronage de l'Enfance, which, in a very complete way, overhauls the juvenile cases that are brought to its notice, and applies the most appropriate remedies within its extensive reach. These remedies include means for dealing with boys of normal or of defective intelligence.

In taking leave of our veteran host, M. le Directeur de l'Asile de Vaucluse, our tour of the mental hospitals of the Department of the Seine reached its close. We had the company, back to Paris of Dr. Targowla, who had done so much for our comfort, and to him we are indebted for a thoroughly interesting programme.

Our good driver, however, less familiar with the lanes of Vaucluse than with the streets of the capital, would have prolonged our journey but for a wide-awake member, who observed that we were presently following the sun and the direction of Orléans instead of turning our backs on both and heading for Paris, where there was little enough time to spare for our train from the Gare du Nord. It sufficed, however, for a sprint into the Louvre by another member who had set his mind on securing a copy of one of the most expressive statuettes which the sands of Egypt have yielded.

These notes on our tour would be incomplete without the intimation that the member who flew to Paris made the return journey in the company of his colleagues who adhered to less soaring modes of transport!

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THE NEW YORK STATE PSYCHIATRIC INSTITUTE AND HOSPITAL.

THE New York State Psychiatric Institute and Hospital, which is a unit of the Medical Centre at Broadway and West 168th Street, was opened on December 3, 1929.

Lieutenant-Governor Herbert H. Lehman, Dr. Nicholas Murray Butler, President of Columbia University, Dr. George H. Kirby, Director of the new Institute, and Dr. Frederick W. Parsons, New York State Commissioner of Mental Hygiene, Dr. William Darrach, Dean of College of Physicians and Surgeons of Columbia Medical School, Dr. Walter W. Palmer, Director of the Medical Service of the Presbyterian Hospital, and Dr. Frederick Tilney, Professor of Neurology to the College of Physicians and Surgeons, and others participated in the dedication ceremony.

In his dedicatory address, Mr. Lehman decried the lack of adequate knowledge regarding the causes, diagnosis and treatment of mental cases, and hailed the great opportunity afforded by the Institute to undertake medical and social research "on a scale and of a character never before made possible under State auspices."

Emphasizing the contribution the Institute is expected to make to preventive psychiatry and mental hygiene, Mr. Lehman referred to the need for the employment of one or more trained psychiatrists to study the problems of child maladjustment in every school system of the State.

The $2,000,000 building rises eleven stories from the Riverside Drive level and is surmounted by a nine-story tower. The main entrance is from West 168th Street, at the tenth floor level. In this structure, with equipment unequalled anywhere in America and probably in Europe, a programme of intensive scientific research into the causes, prevention and cure of mental diseases will be pursued, Hospitalization for both resident and out-patients and social work will be adapted to the scientific needs of the Institute.

This Institute and Hospital is the outgrowth of the Psychiatric Institute, which has been operating in a small but effective way for the past twenty-five years under the control of the State Department of Mental Hygiene. The new building and outlay, sponsored by former Governor Alfred E. Smith, are expected to magnify the thoroughness and scope of the Institute's work to an extent that will make it a world centre for psychiatric research.

During the fiscal year ended last June 30, patients in State hospitals for mental defectives increased by 1,800 over the previous year. The ultimate aim of the Institute is to stem the inroads upon the economic life of the community caused by mental disease.

"The people of the State of New York," Dr. Kirby, the Director, interviewed, said, "have, through their elected representatives and officials, taken a liberal attitude towards the financing of scientific and investigative work in the field of psychiatry. It now becomes the problem of the scientific leaders of psychiatric thought to see correlated present-day knowledge, and to add to it in such a way that not alone will scientific knowledge be increased, but be applied in a practical way toward the prevention and the relief of mental disease throughout the State.

"One of the fine things in this effort of the State of New York is that as we succeed in helping ourselves we cannot fail to help others. This we owe to every State in the Union and every country in the world, for there is hardly a State or nation to whom we are not looking for some knowledge which we may co-ordinate to our advantage.

"I feel that I may speak for Commissioner Frederick W. Parsons of the State Department of Mental Hygiene when I say that the Department is proud to be made the custodian of this outstanding example of scientific progress which has been built by public funds, and is the first tangible evidence of broad-minded co-operation of this character between public and private enterprise, the private enterprise in this case being the Medical Centre."

Several hundred trustees and heads of New York hospitals, men and women prominent in the medical profession throughout the city and others visited the building. The first floor contains the heating plant, laundry, kitchen, pharmacy and storerooms. On the second and third floors are living accommodations for the personnel. The fourth to the ninth floors provide accommodations for 200 patients, children as well as adults.

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The out-patient department occupies a large part of the tenth and eleventh floors. Waiting rooms, offices and examination rooms are provided. Treatment facilities on these floors are so arranged that they are available to patients in the hospital as well as to the out-patient clinic.

In the tower are laboratories for research in chemistry, bacteriology, pathology and psychology. The twelfth floor is given over to the library and medical museum. In the building are an auditorium seating 150, gymnasium and two classrooms.

Dr. H. W. Potter is assistant director. Among the research associates are Dr. Armando Ferrero, specialist in neuro-pathology; Dr. Erwin Brand, formerly of Montefiore Hospital and Home, and a leading student in metabolism; Dr. Leland Hinsie, who has made special studies in the value of psycho-analysis in treating mental disorders and in the treatment of general paralysis; and Dr. Nicholas Kopeloff, who has made a study of the influence of focal infections in mental disorders.

The complete staff will include three senior and two junior psychiatrists, a research associate in psychiatry, chemistry, bacteriology, internal medicine and psychology; three assistant research associates, a chief and five assistants in occupational therapy, a chief and three assistants in social service, a physical training instructor, a nurse and four assistants in the out-patient department, a nurse and six assistants in the hydro- and electro-therapeutic department, seventy-nine nurses and attendants in the ward service, and a photographer and X-ray technician.

J. R. Lord.

JORDANBURN NERVE HOSPITAL AND PSYCHOLOGICAL INSTITUTE, EDINBURGH.

Opening of the Lecture Theatre.

A lecture theatre as part of the Jordanburn Nerve Hospital and Psychological Institute, Morningside Park, Edinburgh, was formally opened on October 15, 1929, by Mr. William Adamson, M.P., Secretary of State for Scotland.

The wide support which the new voluntary venture for treating "nerve" cases is receiving was reflected in the large and representative gathering which had assembled.

The lecture theatre, which has been built at a cost of £8,000, will be available not only for the classes of psychiatry in the University and in the Royal Colleges and School of Medicine, and for post-graduate and special courses of lectures on psychological and neurological subjects, but also for popular lectures to educate the public in the value of good mental health and the prevention of mental ill-health. It holds 250 persons comfortably; its floor is sloped to obtain a good view of the platform, which is 12 ft. wide and 34 ft. long. Much attention has been given to the acoustics, which are perfect. It has a cinema, and an epidiascope is contemplated. It is intended later to erect psychological laboratories at a cost of £20,000, and the site for these, connected up with the lecture theatre and the Royal Edinburgh Hospital for Mental and Nervous Disorders, has already been selected.

Lord Provost Sir Alexander Stevenson presided, and among those present were the Hon. Lord Murray; the Deputy-Keeper of the Signet, Mr. W. C. Johnston, W.S.; Sir Samuel Chapman, M.P.; Sir Patrick Ford, M.P.; Sir Ludovic Grant; Sir David Wallace, Mr. George Mathers, M.P.; Sheriff Brown, K.C.; the Very Rev. Principal Martin, D.D.; Principal Sir Thomas Holland; Dr. R. A. Fleming, President of the Royal College of Physicians; the Dean of the Thistle, the Very Rev. Charles L. Warr; the Very Rev. Dr. J. Harry Miller; Colonel Young, C.B.E., D.L.; Mr. H. O. Tarbolton, architect; Mr. T. M. Gardiner, Chairman of the Board of Managers, Jordanburn Hospital; Sir Robert Philip; Prof. George M. Robertson, Physician-Superintendent and Professor of Psychiatry, Edinburgh University; Sir Norman Walker, Prof. Lorrain Smith, Dean of the Faculty of Medicine, and other Professors in their robes.

The Lord Provost, in introducing Mr. Adamson, said that he would like to take the opportunity, on behalf of the Corporation and citizens, of expressing their high appreciation of the invaluable work carried on in the institution, under the leadership

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of Prof. Robertson. Indeed, to him it was one of the most hopeful signs of the times to observe how every enlightened community was admitting that they had a duty towards their fellow citizens who were either mentally or physically afflicted.

A generous donor had given anonymously a sum of no less than £10,000 as an endowment for working expenses. There they had a fine example of true citizenship. Might he go one step further and make an appeal, which he hoped would find an answer? There was still a capital debt of some £20,000. Might he express the hope that some other generous donor in Edinburgh would follow the lead given by that anonymous gentleman? (Applause.)

Mr. ADAMSON, in declaring the theatre open, said that he appreciated the honour that had been conferred upon him of being invited there to open the lecture theatre. With the enlightened and sympathetic co-operation of the Board of Control, their mental hospitals in Scotland had done great work in restoring to happiness and usefulness many a precious life, and in caring for those whom Fate had doomed to life-long illness. In carrying out those great services for humanity, the Scottish mental hospitals had achieved an enviable reputation, and had earned the admiration of every nation, and as a man interested in public affairs, he rejoiced in being associated with them in the opening ceremony. It was the duty, and ought to be the privilege, of every civilized nation to make ample provision for the welfare, the health and the happiness of that section of their people who, by reason of either bodily or mental infirmity were unable to take care of themselves.

During the latter part of the last century there was a steady awakening of the social conscience to the need of making ample hospital accommodation for those of their people who suffered from well-established bodily illness, and illness that had gone to a stage beyond recovery. Gradually there had crept into the minds of their people the true inwardness of that fine old Highland proverb which said: "Where there is heart-room there is house-room."

Within the present century, however, their medical men had recognized that they were tackling the problem of bodily disease at the wrong end—that they were making provision for disease when recovery was difficult or altogether remote, and that if they were to safeguard their people, then they must deal with the earliest manifestations of illness and prevent those illnesses by dealing with their origins. The result had been the steady growth of a new work of great preventive services all over Scotland—the maternity and child-welfare service, the school health service and a dozen other beneficent services whose aim was to protect the individual from disease.

In the wide field of mental disablement they had been in precisely the same position, but the provision of an essentially preventive service for mental diseases was only now having a comprehensive inception.

The rapid rise of the important nerve hospital and its continuous development as a vital centre for teaching and research were fully described in the admirable annual report of the Royal Morningside Hospital for 1928, and he only required to emphasize the far-reaching effect of that beginning to a hospital provision for conserving the mental health of the Scottish people and raising it to a higher level.

Their people required to understand that the Hospital and all it stood for was a new departure—a new institutional provision, not only for the recognition and cure of early mental disorder, but still more for the investigation of early mental signs, the complete understanding of which meant the prevention of mental disease. At present there was much room, and, indeed, need, for a propaganda of enlightenment. The old fears which had enslaved the public mind in relation to the problems of mental disorder must be robbed of their power. The opening of that theatre offered a platform and a sounding-board for such propaganda.

The Jordanburn Nerve Hospital, which had already commenced its mission of healing, formed only a part, though an important part, of the plans of the managers of the Royal Edinburgh Hospital to deal with a serious public problem. They were there to inaugurate another part of their programme. The theatre in which they were met was designed as a deliberate challenge to the exclusiveness of former methods of dealing with disorder of the nervous system. They were very much indebted to that band of enthusiasts who were busy trying to bridge the gaps which still existed before their knowledge of preventive methods would be complete. There they would find a rallying point and a stimulus to further efforts. There, too, the medical profession would be kept in touch with the developments which occurred from time to time.

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VERANDAH, JORDANBURN NERVE HOSPITAL, EDINBURGH.

LECTURE THEATRE, JORDANBURN NERVE HOSPITAL, EDINBURGH.

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OUT-PATIENT DEPARTMENT, JORDANBURN NERVE HOSPITAL, EDINBURGH.

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The general practitioner must also be encouraged to keep alive his interest in the things of the mind and nerves as well as the body. The family doctor and the specialist must co-operate, if the best results were to be achieved. The interest of the medical student must also be awakened to the importance of the institution and its work.

He need hardly emphasize the importance of all that to Edinburgh—to have under one roof a hospital and out-patient clinic, a psychological institute, and a lecture theatre, all specially designed to tackle a particular social problem; a place, where provision was being made for the prevention of those first complex nervous disturbances that were the forerunners of nervous breakdown. Prevention was better than cure; and the stitch in time which saved nine was as applicable to mental treatment as it was in any other aspect of their lives. The prevention of disease, whether of mind or body, was an economic proposition. It would pay the Nation in pounds, shillings and pence to provide all the facilities for that much-needed social service.

The work of the Institution would reach deep down into the life of the nation. The individual sufferers, the difficult and backward children, handicapped for life in many cases, and those who were mentally and morally weak, and doomed to become derelict, would be helped. The Hospital and its Institute would mean much to the patients. It would actually serve and win more to the Nation.

There was hardly one branch of social service in which the co-operation of the medical profession could be safely dispensed with. It was almost impossible for them to assess at its true value the service rendered by the medical profession to their fellow men. In no part of the world was the service rendered of a higher standard than in Edinburgh. As the person responsible meantime for the conduct of Scottish affairs, he tendered them the cordial thanks of their people for their great service to them and to humanity.

He understood that some £20,000 was still required to provide the laboratories that were the vital centre from which the whole of their research activities must radiate. That great work for social medicine was being undertaken by a voluntary corporation, and he could not doubt that the inspiration to help, which had imbued the founders of their other renowned voluntary hospitals, would fail them in that instance.

He had much pleasure in formally declaring the lecture theatre open, in the full assurance that it would worthily serve the purpose for which it had been erected. (Loud applause.)

Principal Sir THOMAS HOLLAND, speaking on behalf of the University, said that he was very glad indeed that the first public ceremony in which he was privileged to take part in Edinburgh should be the dedication of that lecture theatre to a work which would supplement the activities of the University. He spoke to them as one who had been responsible in other ways for activities of a similars ort—activities which he wished could have been extended—in the country with the government of which he was associated for some years. It was extraordinary to him that they had got over the old difficulty of regarding physical disabilities as due to intervention of Providence. Those who had followed the history of the medical profession would realize what a revolution had occurred since Pasteur discovered that diseases were due to a germ and infection. Yet they still went on imagining that mental aberrations were something beyond the process of research. The work of that institution was going to be great, for not only would it increase the facilities for lectures to students, but it would also go much further—it would undertake research into the causes of mental disturbance. A movement of that sort ought to be considered of great importance in Edinburgh, which had acquired its reputation largely because of its Medical School. Here was another opportunity, largely due to the irresistible enthusiasm of Prof. Robertson, of leading the medical schools of the world in opening up new ground in that particular line of study. Although there was this old popular prejudice against the possibilities of curing mental disorders, they were up against something which was quite curable in medical science. If he could do anything towards helping that forward during his term of office, he would consider it a service to the public of Edinburgh and to the whole community. (Applause.)

Prof. J. LORRAIN SMITH, Dean of the Faculty of Medicine, and Dr. R. A. FLEMING, President of the Royal College of Physicians, expressed the gratitude of the medical profession for the opening of that centre of study of nerve diseases.

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OUT-PATIENT DEPARTMENT, JORDANBURN NERVE HOSPITAL, EDINBURGH.

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Mr. T. M. GARDINER, Chairman of the Board of Management of the Jordanburn Hospital, in moving a vote of thanks to Mr. Adamson, stated that their enterprise had created world-wide interest, Prof. Robertson having received letters of congratulation and communications asking for information from distant parts of the earth.

The proceedings concluded with a vote of thanks to the Lord Provost, on the motion of Sheriff Brown.

[Summary of reports published in the *Scotsman* and *Glasgow Herald* for October 15, 1929.]

CONFERENCE ON MENTAL HEALTH.

A Conference on Mental Health, convened by a Joint Committee of the National Council for Mental Hygiene and the Tavistock Square Clinic, was held in the Central Hall, Westminster, on October 30–November 2, 1929.

The European and American Leagues and Committees of Mental Hygiene had been invited to send representatives, and though only two were able to do so—the Belgian, who sent Dr. F. Sano, of Gheel, and the Swedish, who were represented by Dr. Josef Lundahl, of Wisby—messages of goodwill and congratulation were received from Austria (Dr. Pilcz), Germany (Dr. Sommer), Italy (Dr. Ferrari), Russia (Dr. Rosentein), Spain (Dr. Rubiano), and Switzerland (Dr. Répond). Mr. Clifford Beers, the Founder and General Secretary of the American National Committee for Mental Hygiene, sent warm good wishes and regrets that he could not be present, and the Massachusetts Society for Mental Hygiene wrote expressing its great interest in the programme.

Amongt hose attending the Conference were visitors from Australia, Tasmania, the United States, Canada, India, South Africa (the Chairman of the Johannesburg Committee for Mental Hygiene), and a party of students from the International League of Red Cross Societies, representing nearly every country in Europe. People were present from most of the cities, large towns and country areas in England, and many came from Scotland. The audiences were not only cosmopolitan in character, but were also representative of every aspect of social work—doctors, nurses, teachers (both elementary and secondary), magistrates, probation officers, social workers of all kinds, members of Education and Public Health Authorities, School Care Committees, Boards of Guardians, etc.

The Inaugural Meeting, held on Wednesday, October 30, at 8.30 p.m., was presided over by Viscount Brentford. The Minister of Health (the Rt. Hon. Arthur Greenwood, M.P.), sent a cordial message of good wishes. A message was also read from the Rt. Hon. David Lloyd George.

The CHAIRMAN, in his opening remarks, emphasized the progress that had been made of late years in the treatment of mental disorders, and the urgent need at the present day for preventive work. He expressed the hope that the next few years would see the establishment of a Chair of Mental Hygiene at every University and Medical School.

Sir MAURICE CRAIG (Chairman of the Council) spoke of the history of the mental hygiene movement, and laid stress upon the fact that it was pre-eminently a layman's movement, and had, in fact, been initiated by a layman, Mr. Clifford Beers of New York. He emphasized the need for the reform of the Lunacy Laws, and of the importance of increased facilities for the treatment of early symptoms of mental disturbance, particularly in childhood. Finally he spoke of the proposal to extend the scope of the Tavistock Square Clinic by the establishment of an Institute of Medical Psychology.

Mr. LAURENCE BROCK (Chairman of the Board of Control) spoke of the need for a kinder and more understanding attitude on the part of the general public with regard to mental patients. Legislation was urgently needed to enable mental hospitals to treat voluntary patients, and thus to bring the treatment of mental illness into line with that of physical illness.

Canon T. W. PYM spoke with great appreciation of the admirable work done for early mental and nervous cases by the Tavistock Square Clinic, and Dr. LETITIA FAIRFIELD took as her particular subject that of child guidance.

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On Thursday, October 31, the first session was devoted to a consideration of "Sex Education." A great deal of interest was aroused by this subject, and the hall was filled to its utmost capacity. Mr. W. H. FYFE (Headmaster of Christ's Hospital), presided, and the speakers were: Miss GERALDINE COSTER (Principal of Wychwood School, Oxford) who gave a most interesting and illuminating address based on her practical experience of schoolgirls; Dr. HUGH CRICHTON-MILLER (Hon. Director of the Tavistock Square Clinic), who discussed the attitude of the adult on the question; and Mrs. NEVILLE-ROLFE (General Secretary of the British Social Hygiene Council), who spoke of the need for simple and constructive teaching on the biological and physiological development of the individual in schools.

A session, principally for magistrates and probation officers, was held on "The Working of the Juvenile Courts," LADY EMMOTT presiding.

Mrs. BARROW CADBURY, of Birmingham, spoke from the magistrates' standpoint, and gave a brief survey of the attitude taken by the law towards child criminals from the tenth century to the present day. Miss CLEMENCE PAINE (Probation Officer at the Shoreditch Juvenile Court) followed, speaking on the subject from the angle of the probation officer, illustrating her points by examples taken from her experience of probation work.

The last session of the day dealt with "The Personal Equation in Industry," and was presided over by Sir CHARLES (now Lord) WAKEFIELD. In his opening remarks he drew attention to the fact that employers were coming to realize more and more that the psychological factor had to be considered in industrial conditions. To treat men as machines was not only inhuman, but economically wasteful.

Dr. MILLAIS CULPIN, who is engaged upon research work for the Industrial Fatigue Research Board, gave a most interesting account of the study which was being made into the mental and nervous reactions of 1,500 workers of all ages and classes, showing how symptoms might be aggravated by unsuitable conditions, and how necessary it was to distinguish between nervous symptoms and nervous disability. He estimated that 25% of workers suffered from nervous symptoms which seriously impaired their happiness and efficiency.

Prof. WINIFRED CULLIS (London [Royal Free Hospital] School of Medicine for Women) devoted her remarks to the work done being by the National Institute of Industrial Psychology in the realm of vocation guidance.

The first session on Friday, November 1, was devoted to a consideration of "The Place of Mental Hygiene in Social and Public Health Work." Sir GEORGE NEWMAN presided. In addition to the Chairman the speakers were:

Dr. H. P. NEWSHOLME (Medical Officer of Health for Birmingham), Miss E M. LAWRENCE (Chief Social Worker at the Child Guidance Clinic), Miss HESTER VINEY (of the College of Nursing).

Dr. CYRIL NORWOOD (Headmaster of Harrow School) took the chair at the session on "The Child and the Parent," and in his opening remarks pointed out that the relationship between parent and child must necessarily be one of "give and take," and modern psychology tended to blame the parent for whatever went wrong in the child's upbringing.

The Rev. L. W. GRENSTED (of University College, Oxford) emphasized the fact that the natural environment of the child was the home, and that despite the modern tendency of the State to undertake the education and training of children, the responsibility lay with the parents.

Dr. A. HELEN BOYLE spoke of the importance of training in adaptability in early life.

At the evening session on "Delinquency—a Problem in Mental Hygiene," the chair was taken by Mr. ALEXANDER MAXWELL, Chairman of the Prison Commission, and Mr. CLARKE HALL, Metropolitan Magistrate at Old Street Police Court and at the Shoreditch Juvenile Court, was the principal speaker. He traced the gradual improvement in the public attitude towards the delinquent from the days when a child was hanged for a piece of destructive mischief to the present day, when the idea of reformation was gradually taking the place of retribution. There could, however, be no true justice without taking into consideration the circumstances of environment and heredity, and there was, as yet, no provision for the complete

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knowledge of these in English law. Mr. Clarke Hall dwelt on the importance of the juvenile courts from the sociological point of view, since most habitual criminals began their anti-social careers at an early age, and he urged the necessity for expert medical and psychological advisers in connection with every court.

Dr. HUGH CRICHTON-MILLER, Dr. R. D. GILLESPIE and Dr. W. A. POTTS each spoke briefly of their own experiences of the problems connected with delinquency.

The final meeting, on Saturday, November 2, took the form of a discussion for parents and teachers on "The Problem Child at Home and in School." The chair was taken by Dr. RALPH CROWLEY (Senior Medical Officer of the Board of Education), who spoke briefly on the importance of co-operation between the home and the school, so that the child's life should not be episodic, but form a harmonious whole in which he might develop mentally on sound lines.

Miss E. MILDRED NEVILL (Psychologist to Frensham Heights School) dwelt on three main groups of problem children—disturbers of the peace, reality shirkers and moral offenders.

Dr. HAMILTON-PEARSON suggested that modern methods of education created problem children by insisting on a uniform system for all types of minds.*

SCOTTISH ASYLUMS PATHOLOGICAL SCHEME.

THIRTY-SECOND ANNUAL REPORT FOR THE YEAR 1928.

(Abstract.)

There has been a further increase in the amount of routine work performed in the Laboratory, the number of specimens reported on having reached 237. Visits have been paid by the Pathologist to several of the contributing hospitals.

Dr. Reynolds's scheme for increased cooperation between his course and the clinical teaching of neurology in Edinburgh is now being carried out. Drs. David Orr and James K. Slater joined with Dr. Reynolds in conducting a combined course in Neurology, including the Anatomy and Physiology of the Central Nervous System and Pathology.

Research has been continued on "The Paths of Infection of the Central Nervous System." No further individual cases will be published, but the results obtained will be incorporated in the monograph which is in course of preparation. Drs. Reynolds and Slater are also continuing their experimental research on the healing of lesions of the brain.

Several financial grants have been promised for the ensuing year. For the year under review there have been grants from the Medical Research Council, Carnegie Trust and Moray Fund, and with these the total revenue amounted to £1,968 8*s.* 10*d.* The expenditure was £1,192 9*s.* 4*d.*, the credit balance £775 19*s.* 6*d.*, and the surplus on the year's working £86 10*s.*

Dr. R. B. Campbell, who was Secretary and Treasurer for fourteen years, resigned at the last Annual Meeting. Both the Board and Dr. Reynolds express their indebtedness to him, and their keen regret at his retirement. Dr. W. D. Chambers has been appointed in his place, and the other members of the Executive Committee are Dr. C. J. Shaw, Chairman, and Drs. Douglas McRae, W. M. Buchanan, Ex-Provost Stark, Prof. J. Lorrain Smith, Drs. T. R. Ronaldson and R. B. Campbell.

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* *The Proceedings of the Conference on Mental Health*, edited at the request of the Joint Committee by J. R. Lord, *C.B.E.*, M.D., F.R.C.P.E., will shortly be published by Messrs. Adlard & Son, Ltd., 21, Hart Street, London, W.C. 1, and may be had on the order of any Bookseller or from the Offices of the National Council for Mental Hygiene, 78, Chandos House, Palmer Street, London, S.W. 1, or from the Tavistock Square Clinic, 51, Tavistock Square, London, W.C., 1.

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EDUCATIONAL NOTES.

National Hospital, Queen Square, Medical School.—A Post-Graduate Course on Diseases of the Nervous System will be held at the above Hospital from February 3 to March 28, 1930.

The General Course will consist of 32 Clinical Lectures and Demonstrations at 3.30 p.m. each week-day, except Wednesday and Saturday. Teaching in the Out-Patient Department on each week-day except Saturday at 2 p.m.; and eight Pathological Lectures and Demonstrations on Mondays at 12 noon. The Fees for this Course will be £6 6s.

A Course of eight Lectures on the Anatomy and Physiology of the Nervous System will be arranged on Fridays at 12 noon if there are sufficient applicants. Fee £2 2s.

A Course of twelve Clinical Demonstrations chiefly on Methods of Examination of the Nervous System will be given on Tuesdays and Thursdays at 12 noon. Fee £2 2s.

Mr. Armour and Sir Percy Sargent operate at the Hospital on Tuesday and Friday mornings at 9 a.m. or at such other times as may be announced.

Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course.

Tickets entitling to attend the Out-Patients' Clinic only (£2 2s. for 3 months) may be obtained from the Secretary. A limited number of Students can be enrolled as Ward Clerks. Fees: £5 5s. three months; £7 7s. six months; £10 10s. Perpetual Ticket. Applications should be addressed to the Secretary, Medical School, National Hospital, Queen Square, London, W.C. 1.

For further particulars apply at the Hospital to Dr. J. G. GREENFIELD, Dean of the Medical School.

The Tavistock Square Clinic for Functional Nervous Disorders, 51, Tavistock Square, W.C. 1.—A Course of eight Lectures will be given at the Friends' House, Euston Road, N.W. 1 (opposite Euston Station), on Wednesdays, beginning January 29, 1930, at 6 p.m., on Personality: Its Constitution, by R. G. Gordon, M.D., F.R.C.P.E., Royal United Hospital, Bath; Its Problems, by J. R. Rees, M.D., Deputy Director, Tavistock Square Clinic.

Fee for the Course, £1 1s. Single Tickets at 5s. will be issued in far as accommodation permits. Tickets for the course must be obtained *in advance* from the Hon. Lecture Secretary at 51, Tavistock Square, W.C. 1.

THE ESSENTIAL STRUCTURAL REQUIREMENTS OF A COLONY FOR MENTAL DEFECTIVES.

The Board of Control, with the approval of the Minister of Health, have appointed a Committee with the following terms of reference: "To consider and report what are the essential structural requirements of a complete colony for mental defectives of all types, and to what extent the cost could be reduced by the adoption of semi-permanent or temporary buildings or other new methods of construction, having regard to the comparative cost of maintenance as well as the initial capital expenditure involved."

The Committee is constituted as follows: Walter Hedley, Esq., D.S.O., K.C., Recorder of Newcastle-on-Tyne (Chairman); Mrs. F. Rose Davies, J.P., Alderman, Glamorgan County Council; Miss Clara Martineau, J.P., Member of the Birmingham City Council; Sir George Oatley, F.R.I.B.A.; Dr. A. Rotherham, Commissioner of the Board of Control; A. Scott, Esq., M.B.E., A.R.I.B.A., Chief Technical Officer, Ministry of Health; Sir Lindsey Smith, J.P., Chairman of the Board of Governors of Holloway Sanatorium; F. Douglas Turner, Esq., M.B., Medical Superintendent of the Royal Eastern Counties Institution, Colchester.

Mr. H. J. Clarke, of the Board of Control, will act as Secretary.

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THIRTY-FOURTH CONGRESS OF FRENCH-SPEAKING ALIENISTS AND NEUROLOGISTS.

This Congress will be held at Lille from July 21 to 26, 1930, under the presidency of Prof. Abadie of Bordeaux.

Discussions will take place on the following subjects:

1. "The Cerebro-Spinal Fluid in Mental Disorders," to be opened by Dr. Lamache.
2. "Postural Reflexes," to be opened by Dr. Delmas-Marsalet.
3. "Social Insurance Law as applied to Patients with Mental Disorder," to be opened by Dr. Calmettes.

In addition numerous individual papers will be read, and various institutions will be visited.

The Secretary-General is Dr. P. Combemale, 93, rue d'Esquermes, Lille, from whom particulars as to membership may be obtained. The members' subscription will be 50 fr. (8s.). Reduced fares will be available on the French railways, and various tours will be organized after the meeting.

These congresses, although conducted exclusively in French, have a definitely international character. In view of the easy accessibility of Lille, it is hoped that there will be a good attendance of British visitors.

THE NATIONAL COMMITTEE FOR MENTAL HYGIENE, U.S.A.

The Twentieth Anniversary.

The twentieth anniversary of the inauguration of the mental hygiene movement and the founding of the National Committee for Mental Hygiene was celebrated on Thursday evening, November 14, 1929, with a dinner at the Biltmore Hotel in New York City, attended by nearly 700 psychiatrists, psychologists, educationalists, social workers and prominent laymen from various parts of the country, and presided over by Dr. William H. Welch, Director of the Department of the History of Medicine of Johns Hopkins University and Honorary President of the National Committee.

Addresses were given by President James R. Angell, of Yale University, Dr. William A. White, Superintendent of St. Elizabeth's Hospital, Washington, and Dr. Frankwood E. Williams, Medical Director of the National Committee, all of whom paid tributes to Mr. Clifford W. Beers, author of *A Mind that Found Itself*, the publication of which twenty-one years ago led to the organization of the National Committee.

Mr. Beers described the events incidental to the establishment in 1903, at the home of Anson Phelps Stokes, in New Haven, Connecticut, of the pioneer Connecticut Society for Mental Hygiene, from which the national movement grew, and reviewed the development of the work to the present time.

Dr. White, speaking of the aims and objects of the National Committee, said: "The average patient admitted to a State Hospital has already been getting mentally ill over a period of a number of years, sometimes throughout a lifetime of thirty or forty years, and it could not be expected that miracles of cure could be worked in this material, and so naturally those who were interested in mental hygiene began to ask themselves the questions: When does mental disease begin? What are its earliest manifestations? How can these manifestations be prevented? And how can the prospective patient who is for the time being on the wrong track be gotten back in the right direction? And so over a considerable period of time we see movements calculated to attempt answers to these questions. We find psychiatrists at our instance being introduced into the universities where they make contact with the adolescent youth of the country, and we find those same psychiatrists realizing that the adolescent who is headed for mental disease has been on

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the wrong path for some considerable time. And so then we find the psychiatrist in the schools, the public schools. We find him prominent in the parent-teachers' group. We find him busily engaged in segregating the defective, the backward and the abnormal child, and advising for them special methods. And then finally we find him engaged with the whole problem of the care and bringing up and education of children, beginning even before school days with the pre-school child and attempting to correct at the very start habits in the early months of childhood."

President Angell described the mental hygiene work that is being done at Yale University to relieve students of mental stress, to build up healthy emotional and mental attitudes, and to prevent mental and nervous breakdowns.

Dr. Frankwood E. Williams and Dr. George K. Pratt, Assistant Medical Director of the Committee, stressed the need for trained workers and psychiatrists in the mental hygiene field. A partial report of preparations being made for the reception of the First International Congress for Mental Hygiene was rendered by John R. Shillady, Administrative Secretary of the Congress. Dr. George S. Stevenson, Director of the Division on Community Clinics, traced the growth and development of community and child guidance clinics in the United States.

STUDY TOURS AND POST-GRADUATE EDUCATIONAL INFORMATION SUB-COMMITTEE.

Tour of Scottish Mental Hospitals.

A Study Tour of Scottish Mental Hospitals has been arranged to take place from Monday, June 2, to Thursday, June 12.

The party will meet in Dumfries on the first evening, and the same week will visit the Crichton Royal Institution, Dumfries, the Glengall Hospital, Ayr, the Glasgow Royal Mental Hospital, Gartnavel, Govan District Asylum, Hawkhead, Duke Street Infirmary Mental Wards, and Stoneyetts Institution.

Provision is being made for the week-end at Callander, for the Trossachs.

The programme for the second week commences with a visit to the Murray Royal, Perth, and to groups of boarded-out patients in Fifeshire.

From Edinburgh it includes the Bangour Village, the Gogarburn Certified Institution, the Laboratory of the Scottish Asylums, and the several establishments of the Royal Edinburgh Hospital, Morningside.

The tour from Dumfries to Edinburgh will be by motor coach, unless a sufficient number of members elect to bring their own cars and to convey other members, so that no additional conveyance may be required. It is requested that members of the Association who desire to take part in the Tour will notify the Hon. Secretary, at the address given below, stating—

(i) If he will be accompanied by members of his family.
(ii) The number of bedrooms required.
(iii) Whether a private car will be used, and what number of other members can be conveyed in it from Dumfries to Edinburgh.

Reduction of fares, where members are travelling by rail to Dumfries and from Edinburgh home, will depend upon the number of bookings.

Messrs. Dean & Dawson, who will secure accommodation and transport, estimate that the hotel charges will be about £8 for the eleven nights, exclusive of dinner, and £11 including this meal. If 18 persons use the coach, the charge will be about £2 each.

It will greatly assist the booking arrangements and the comfort of the party if members wishing to join will be so good as to send their applications before April 4, together with the particulars above requested, to Dr. A. Edward Evans, 3, Rotherwick Court, Golders Green, London, N.W.11.

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The Summer 1930 Short Post-graduate Course in Neurology and Psychiatry in Vienna.

The fifth intensive course in the above subjects is announced to commence on June 23, 1930.

The course will last six weeks, terminating on July 31, and will be conducted in English. It will be held for a minimum number of eight and a maximum of fifteen men. The fee is $150, about £30 15s., including the subscription to the American Medical Association in Vienna (Alserstrasse [9] Vienna [viii]), under whose auspices the Course has been organized.

Applications with a banker's draft for $40, about £8 4s., should be directed to Docent Dr. E. Spiegel, Vienna, I. Falkenstrasse 3, Austria.

They will be accepted in the order in which they are received. Deposits will be refunded if the number of applications is insufficient for the Course to be held. A card is issued which permits holders to enter Austria without payment of the Austrian visa.

The following is a summary of the lectures:

Hofr. Prof. Wagner	A special lecture.	
Prof. Pötzel	A special lecture.	
Prof. Marburg	Pathology of Nervous Diseases	12
Prof. Pappenheim	Nervous Diseases Clinic	15
Prof. Gerstmann	Nervous Diseases Clinic	15
Doc. Kogerer	Functional Nervous Diseases	8
Dr. Dattner	Neuro-syphilis	8
Prof. Stransky	Psychiatry	15
Dr. Hartmann	Psycho-analysis	10
Dr. Kauders	Treatment of Nervous Diseases, including Hypnosis	8
Doc. Allers	Individual Psychology	5
Doc. Spiegel	Sympathetic Nervous System	12
Prof. Hafferl	Anatomy of Peripheral Nerves	6
Hofr. Prof. Sträussler	Histopathology of Diseases of the Central Nervous System (especially of the Cerebral Cortex)	8
Doc. Spiegel	Anatomy of the Central Nervous System	25
Doc. Spiegel	Physiology of the Central Nervous System	15
Prof. Alexander	Neurology of the Ear	8
Prof. Fuchs	Neurology of the Eye	7
Dr. Kestenbaum	Ophthalmoscopy	5
Dr. Brunner	Nystagmus	3
Prof. Schüller and Doc. Sgalitzer	X-Rays	8
Prof. Hirsch	Hypophysis	1
Dr. Adolf	Colloidal Chemistry of Spinal Fluid	4
Dr. Stein	Speech and Voice Disturbances	2
Dem. Zellman	Laboratory Technique	2

The more important of the clinical lectures will be held during the first three weeks of the Course, in which also the major part of the psychiatry section will be taken.

Further particulars as to the Course may be obtained from Docent Dr. E. Spiegel, at the address given above.

It is understood that hotel charges in Vienna are about twelve shillings a day and that Pension rates are much less. The American Medical Association in Vienna will supply this information.

The fares to Vienna vary with the route selected. A first-class return fare *vid* Ostend and Cologne is about seventeen guineas, second-class is a little over £12.

Members intending to take the Course and wishing to get into touch with other applicants should communicate with the Honorary Secretary of the Sub-Committee, Dr. A. Edward Evans, 3, Rotherwick Court, Golders Green, London, N.W. 11.

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First International Congress on Mental Hygiene, Washington, D.C., U.S.A., May 5–10, 1930.

The National Council for Mental Hygiene has undertaken to act in Great Britain as the liaison body in regard to the above conference, and the Study Tours Sub-Committee of the Association has thought the occasion of the Conference an opportune moment to organize a study tour on the lines of its recent successful tours in the Netherlands and Paris. As attendance at the Congress is not limited to members of particular organizations or official delegates, but is open to all interested in mental hygiene, members of the Association, by becoming "certified participants" in the Congress, will also be able to participate in the pre-Congress Mental Hygiene Tour and visit representative American institutions as a party, as originally projected by the Study Tours Sub-Committee. This opportunity of becoming personally acquainted with American psychiatry under such advantageous conditions, economically and otherwise, is not likely to present itself again for some years, and the opportunity is deserving of very serious consideration.

Copies of the "Preliminary Announcement" containing the programme of the Congress, the mental hygiene tours and forms of application for membership, etc., can be obtained from the Secretary, National Council for Mental Hygiene, 78, Chandos House, Palmer Street, London, S.W. 1.

It will be a convenience to all concerned if the name and address of the participant is sent at once to the Honorary Secretary (J. R. Lord, *C.B.E.*, M.D., F.R.C.P.E.), The National Council for Mental Hygiene, Horton House, Epsom, and, if a member of the Royal Medico-Psychological Association, also to the Honorary Secretary (Dr. A. Edward Evans), Study Tours Sub-Committee, 3, Rotherwick Court, Golders Green, London, N.W. 11. Lists of names of those intending to join the Conference and Study Tours could then be circulated from time to time to enable mutual arrangements for travelling and for the stay in Washington to be made.

It is important that the decision should be made at once, as hotel reservations are being rapidly made and berths on the "Congress" ships are limited.

Travel arrangements, including reduced railroad and steam rates, have been approved, and are in the hands of Thos. Cook & Son, Ltd., Head Office, Berkeley Street, London, W. 1, and Branches.

The "Congress" ships are the S.S. "Lancastria," S.S. "Mauretania," S.S. "Caronia," and S.S. "Aquitania."

On account of the early date of departure, intending delegates and others should immediately advise the nearest office of Thos. Cook & Son, Ltd., of their travel requirements as early as possible.

Official Pre-Congress Mental Hygiene Tours.

These tours have been arranged by the American Organizing Committee, and details can be obtained from the offices of the National Council, or from Dr. Lord or Dr. Evans, at the addresses stated above.

Arrangements can also be made for other itineraries by those who wish to make special tours to suit their own particular interests and who desire to travel independently of the specially conducted tours. The outline for such tours should be prepared at once and forwarded without delay to Dr. George K. Pratt, of the National Committee for Mental Hygiene, 370, Seventh Avenue, New York. The travel arrangements involved in such independent itineraries will need to be made with Messrs. Thos. Cook & Son on arrival at New York.

One tour has been arranged for those wishing to visit representative public and private hospitals and other institutions for mental diseases and mental deficiency.

Another tour has been arranged for those specially interested in mental hygiene and child guidance clinics, also in school facilities for dealing with mental hygiene problems, and in juvenile delinquency.

The inclusive cost of each tour is £20 per person (*based on parties of 25*).

The fare does not include breakfast or dinner throughout the tour, tips to waiters, Pullman porters, hotel servants, etc.

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The extra cost for single rooms (with a bath) at hotels in the itinerary is £1 5s.

It is realized that after the Congress some will wish to visit some of the most interesting places in the United States or Canada. Many tours can be arranged, and itineraries will be prepared to suit individual tastes and requirements (providing for travel tickets, hotels, train accommodation, sight-seeing excursions), if members will forward at once to the nearest office of Thos. Cook & Son, Ltd., particulars of the places they wish to visit and the time at their disposal.

OBITUARY.

C. Floyd Haviland, M.D.

We regret to announce the death, on January 1, 1930, in Cairo, of Dr. C. Floyd Haviland, Superintendent of Manhattan State Hospital, Ward's Island, New York. He had a distinguished career in psychiatry. He was formerly State Commissioner in Mental Hygiene, and in 1926 President of the American Psychiatric Association. He was born in 1875, and had reached his optimum of vigour and usefulness, and his unexpected decease came as a shock to his American colleagues, and to a still greater number of other friends and admirers.

NOTICES BY THE HONORARY LIBRARIAN.

The following journals are circulated from the Library:

American Journal of Psychiatry.
The Psychological Review.
Journal of Neurology and Psychopathology.
L'Encéphale.
International Journal of Psycho-Analysis.
Journal of Abnormal Psychology.
Mental Hygiene.
Journal of Nervous and Mental Diseases.
Revue Neurologique.
Archives of Neurology and Psychiatry.
Journal of Comparative Psychology.

Members are requested to return all long-outstanding books to the Library as soon as possible for the purpose of cataloguing. It appears that in a number of instances in the past there has been a failure to register the loans. Six members are thanked for returning books which have been lost sight of for years.

Members are invited to make gifts to the Library to assist in building up a historical collection of psychiatric works from the seventeenth century onwards. In selecting books for presentation, members are advised to consult first the Library Catalogue (Messrs. J. & A. Churchill, price 2s. post free), in order to see what books the Library possesses and those it is desirable it should possess.

The new accommodation for the Library at the B.M.A. House is available for use. There is now ample room for the expansion of the Association's collection of books.

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NOTICES BY THE REGISTRAR.

Examinations for the Nursing Certificates.

List of Successful Candidates.

November, 1929.

Those marked * passed " with distinction."

Mental Nursing.

GREAT BRITAIN AND IRELAND.

Beds, Herts and Hunts (Three Counties).—George Fennell, Roland Aubrey Bishop.

Berkshire.—Margaret O'Donnell.

Cambridgeshire.—Elizabeth Stamp.

Cheshire, Chester.—Theresa Fulton, Gladys Buckley, Olive Jones, Thomas Christopher Bowen, Robert Phillips, Arthur Jones.

Cheshire, Parkside.—Ellen Maxwell, Mary Owens, Ellen Phelan, Rose Ann Kelleher, Brigid Brady, Stanley Lea Royle.

Cornwall.—Arthur Pedlar, John Louis Merrifield, Agnes Mosby.

Derbyshire.—Henry Mee, Kate Theresa Burns, Margaret Mary Bond.

Devon.—Emily Oke, Sadie Baillie.

Dorset.—*William Allen, William Harry Betts, Alfred Cutling.

Durham.—Agnes Iveson, *Lilian Ivy Williams, Henry Collins, Stephen Melville Dunbar, Albert Nelson Ellis, Alice Bateman.

Essex, Brentwood.—Vera Grace Tranter, Sarah Gibbons, Millicent Hunt, Hilda White, Ena Constance Freake, Lydia Blazer, Ivan Chapman, Ernest Edward Eaton, William James Raven, *Harold Waite, *John Walker, Joseph Wood.

Essex, Severalls.—William John Christie, *Eric Douglas Hogg, Ronald Francis Lowe, John Whittle, Mary Jane Rooke.

Hampshire, Park Prewett.—Leonard Bramwell Amor, Cyril Victor Day, Harry Thomas Cornish Mills.

Hertfordshire, Hill End.—Evelyn Maud Adams, Elizabeth Hayes, *Hilda Lawrence, Eden William Gould.

Kent, Chartham.—James Cecil Batsford, Marjorie Lawson, Blanche Edith Sweet, Olive Mary Tickell, Winifred Waghorn, Winifred Emily Evans, Beatrice Lloyd Annie McCann.

Lancashire, Whittingham.—Harold Sutcliffe, John J. Davies, John T. Osborne, Frederick Stanton, Francis J. Baxendale, Patrick Harlowe, John Ryan, Teresa Connor, Ada Cowell, Marie Hoyle, *William Robinson.

Lancashire, Winwick.—Teresa Elizabeth McCafferty.

Lincolnshire, Bracebridge.—Alfred Henry Taylor, Wilfred David Ford.

Lincolnshire, Kesteven.—John Alfred Hinsley.

London, Banstead.—Frances Adelia Davies, Rose Gallagher, Fanny Hall, Adelaide Annie Hatherill, Bessie Rowlands Jones, Mary Margaret Kirby, Beatrice Vida Mesritz, Catherine McDonald Paterson, Annie Pearson, Ellen Regan, Gladys Florence Stevenson, Selina Taylor, Dorothy Cunningham Turner, Eileen Florence Woolley, Frederick Charles Bailey, Ernest John Chappell, Ivor Davies, William Victor Davis, Charles William Frain, Reginald Frank Hedges, Henry George Jeater, *James Frederick Sigsworth, James Ross Sibbald.

London, Bexley.—Charles Stanley James, Beatrice Elsie Edwards, Gertrude Edith Davidson, Dorothy Edith Ellender, Wilhelmina McKerron, Ethel Frances Beaney, Olive Renton Oakes Rattee, Ellen Elizabeth Martin, Emma Baker, Claribel Grace Barnes, Beatrice Perkins, Winifred Clara Coward.

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London, Cane Hill.—*Lilian Mary Blackford, Alice Marguerite Stevens, Mabel Elsie Vidler, Rita Ellis, Ethel Atkins, Violet Ethel Aprile, Beatrice Morgan Penfold, Ellen Cecilia Jane Martin.

London, Claybury.—Emma Irene Allan, Dorothy Emily Collen, *Joseph Gue, Maud Lowry, Helena McGee, Daisy Ethel Phillpott, *Edgar Cornelius Smith, Violet Minnie Woodward, Lilian Williams, Sallie Grace Whayman.

London, Colney Hatch.—Ruth Jennison, Lilian Aspden, Anne Jones, Ena Rosalind Bradley, Rose Pull, Hilda Rosina Mitchell, Robert Roger Sm th.

London, Ewell Colony.—Elizabeth Ellen Sharp, Doris Muriel Wilkins, *Beatrice May Price, Grace Frances Cook, Lilian Estill Hockaday, Olive Winifred Adams, Catherine Agatha May Oakes, Mary Kate Lane, Kathleen Agard Higgott, Joseph Gordon Haley, Amos Ernest Rudge, Leonard Arthur White.

London, Hanwell.—Isabella McGill, Florence N. Forrow, Lilian I. Rose, Emma Nicholls, Gwen Thomas, Gertrude R. Page, Elsie May Field, George M. Robinson, Harry Young, Samuel T. Young.

London, Horton.—Selina Mary Moses, Kate Lilian Orpin, Catherine Bridget Redmond, Eleanor Wharrier.

London, Long Grove.—Helen May Clarke, Rachel Maria Campbell Davison, Edith Isabel Jones, Sarah Jane Meek, Millicent Stevens, Harriet Williams, Alfred Guy Wright.

London, Maudsley.—*Katherine Fyrthe, Gladys Meagerson.

London, West Park.—Sybil. Davies, Elizabeth Ann Flannery, Alice Green, Nellie Gladwell, Mary Jannette Lord, Phyllis Faith Lock, Margaret Purcell, Annie Sheila Singleton, Eileen Tadman, Audrey White, Evelyn Williams, Alfred Walter Johnson, William Henry Hamblin, Ernest Owen Smith, Anne E. Coffey.

Middlesex, Napsbury.—John Charles Neville, Alexander Frederick Peach, William Edward Bovington, Daniel Harry Brown.

Middlesex, Springfield.—Gladys May Hastings, Jennie Eliza King, Barbara Lee, Miriam McDonald, Frances Adelaide Pride, Anne Richardson, Kathleen Parfitt, Henrietta Webber, Walter North Willis.

Norfolk.—Elsie Sturman.

Northamptonshire.—Leonard Albert Brawn.

Northumberland.—William Moore.

Nottinghamshire.—Ivy Massam.

Oxford County and City.—John Collins, *John Hamilton, Maurice Pape Louth, Evelyn Elizabeth Cartwright, Rose Margaret Grant, Iva Isabella Taylor, Muriel May Sheppard, Sarah Ellen Johnstone.

Suffolk.—Violet I. Arterton, Evelyn M. Cook, Vera D. Stratford.

Surrey, Netherne.—Guy Hamilton Wills.

Sussex, East.—Leslie Reginald Chinchen, William Alexander Southon, Henry Gordon Evans, Violet Garrett, Florence Ethel Pitman, Hilda Etheridge.

Sussex, West.—Florence Doris Knight, Lilian Myrtle Arnell, Charles Murgatroyd, Alfred Arthur Harding.

Wiltshire.—*Nellie Wish, Leonard Goodman, Stanley Peck.

Worcestershire, Barnsley Hall.—John William Burns, George Wilfred Johnson, Herbert Samuel Waites, Ethel Prudence Clarke.

Yorkshire, Wadsley.—Evelyn Dore, Mary Priest, Arthur Rolley.

Yorkshire, Menston.—Kathleen Gladys James, Ida Harlington, Lizzie Leane, Elizabeth Mackie, *Mary Hetty Rae, Catherine Jennings, William Cousins, George Woodhead, Norman Brough, Sam Rawnsley.

Birmingham, Rubery Hill.—Jemima Kerr, Evelyn Maud Matthews, Eleanor Mounsey, Jane Graham Mounsey, Mary Teresa Welch, Louisa Kember, Henrietta Best, Clarice Carroll, Marion Annie Thornton, Margaret Martha Cook, Kathleen Lewis, Helen Currie, Ernest Watts, John Francis Lewis, James Henry Burgoyne.

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Birmingham, Winson Green.—John Maddox, Margaret McInerney, Mary Carlyle McClarey.

Brighton.—Daisy May Bass, Brenda Lilian Down, Edith Leather, Thomas Leeming, John Kenneth George Carpenter.

Bristol.—Gladys Hancock, Blodwen Davies.

Derby.—Ada Smith.

Gateshead.—Mary Isobel Brewis.

Hull.—Edward Thomas Leonard Parker, William Edward Johnson, Robert Smith.

Newcastle.—Dorothy Waugh, Lily Vowell.

Newport.—Cyril Wm. Pope.

Norwich.—Alice Elizabeth Clare, Phyllis Kathleen Eva Ducker, Hilda Harriet Filby, Bertha Cox, Jessie Agnes Thomson.

Nottingham.—Annie Eugenia Atkinson, Nellie Jenness, Lilian Allen, Martha Dalton, Emma Smith, Kathleen Mary Hobson, Charles Douglas Milbourne Taylor.

Plymouth.—Winifred Merry, Flora Rose Riddell.

Portsmouth.—Catherine Maud Johnston, John Henry Martin, Archibald Harry Gadd, Charles Victor Abrams, Thomas John Jones.

Sunderland.—Frederick Mangles Bond, James Mall, Arthur Edward Page, Lucy Robinson Hogg.

West Ham.—Kathleen Fay, Sarah Ellen Boyle, Nora Agnes Wheeler, Ada Ethel Evelyn Wright, Reginald James Chessell.

York.—Herbert Nash, Florence Mary Thompson, Norah Tumilty, Evelyn Young.

M.A.B., Fountain.—*Nellie Rhoades.

M.A.B., Tooting Bec.—Joan Howard, Eva Lilian Bound, Sidney George Carpenter, William James Woodhouse, Thomas Lincoln Fuller, Albert Charles Bryant, Henry Burke, Harry Jesse Adams.

Bailbrook House.—*Ethel Rose Spiller, Dorothy Mabel New.

Barnwood House.—Alicia Ford.

Bethlem Royal.—Nina Katherine Banks.

Camberwell House.—Frances Firth, Ellen Moles, Charles Thomas Francis Butler, Michael Glenny, Frederick Henry Hookins.

Coppice.—Stanley Edward Hickman.

The Old Manor.—Charles Henry Blake, William Keating, Alice Reidy.

The Retreat.—Doris Edith Goddard.

Warneford.—Lancelot Richard Bathe, Clara Green, Violet Mabel Garlick.

Aberdeen Royal.—Bessie Panton.

Argyll and Bute.—Helen Isabella Mackenzie, Angus Barriskell.

Bangour.—Agnes Mitchell Mabon, Christina McIntosh McDonald, Martha Davidson.

Crichton Royal.—Elizabeth Manson Chalmers, Isabella Galleitch Munro, Monica M'Gill, Alexanderina Stewart, Margaret Crawford Cooper, Martha M'Laughlin.

Glasgow, Gartloch.—Isabella MacRae Diack Craighead, Isabel Paterson.

Glasgow, Woodilee.—Mary Katherine McMurrough, William Bell, Charles Forrest, James Marshall Knox.

Govan.—David Forrest.

Inverness.—Mary MacIntosh.

Montrose Royal.—Christina Barker, Elizabeth Dalgarno, Mary Hughes.

Paisley, Riccartsbar.—John Alexander McRobbie.

Renfrew, Dykebar.—Donald McIntosh.

Roxburgh.—Mary C. T. Petrie.

Royal Edinburgh, Craig House.—Margaret Duguid, Mae Henderson.

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Royal Edinburgh, West House.—Catherine Juhle, Mary Silver, Jane J. Duffey, Helen Edward.

Stirling.—Mary Anne Holland, Mary McDonald, *Jessie Nicol, Joseph Banks, David Gilmour Traill.

Ballinasloe.—Ellie Mahon, Michael Finnerty, Thomas Hogan, John Garvey Meade.

Belfast.—David McClurg, Sheila Gleeson, Grace Garland, Jeanie B. Givan, Rachel H. Hall, Hanna McLaughlin, Mary Taylor.

Downpatrick.—Lilian Johnston, Mary Jane Lindsay, Annie McKeating, Mary Ellen McLaughlin, Isabella Parke, Adalina Poole, Edward Joseph Connor, Edward Lennon, Alexander McBride, Robert Charles McCreedy.

Maryborough.—Katie Donoran, Mabel Gee, Catherine Daly, Mary Pilkington.

Mullingar.—Joseph O'Brien, Kate King, Mary Gannon.

Omagh.—Maggie Brown, Jennie Lynn, Bridget Brogan, Maria Galbraith, Kathleen Coyle.

Portrane.—Mary Brady, Elizabeth Dempsey, Catherine Feeley, Amelia Geoghegan, Ellen Knight, Thomas Denneney.

SOUTH AFRICA.

Bloemfontein.—Schalk Willem Grobbelaar van Niekerk, Jelena Human, Hettie Martina Schnetler, *Maria Elizabeth Bruwer.

Fort Beaufort.—Samuel Hefford Dennis, Reinier Christian Els, Freda Scholtz, Aletta Johanna von Ludwig.

Fort Napier.—Ellen Rose Carter.

Grahamstown.—Henrietta Johanna Freegard, Jacob Johannes Bester Schmidt, Gertruida Susanna Terblanche.

Pietermaritzburg.—William Andries Jacobus van der Merwe.

Port Alfred.—Stephen Peter Goosen, *Grace Marjorie Lovell.

Pretoria.—*Marjorie Edith Baker, Vera Diana Gwendoline Dawson, Nicolaas Johannes Grobler, Cornelia Elizabeth Koekemoer, Emily Lambourne, Maria Margretha Petronela Nel, Pieter Andries Theodorus Parsons, Aletta Christina Johanna Stoffelina Pypers, Phillipus Rudolph van Staden, David Galloway.

Queenstown.—Diederick Cornelis Jansen van Vuuren, Hendrina Perronella van der Walt, Anna Maria le Roux, Florence Evelyn de Beer, *Janet Alice Duncan, Gertrude Lydia Meyer, Anna Sophia Jansen van Rensberg.

Valkenberg.—Andries Pertus Johannes Albertyn, Jan Abraham Botha, Gerrit Erasmus Burger, Gideon Rossouw de Villiers, Johannes Jacobus Louw, Adrian Louw Ackermann, Margaretha Johanna Francina Lubbe, Anna Jacoba Christina van Schalkwyk, Johanna Justina Jacoba van der Spuy, Johanna Aletta Otto, Anna Albertha van Rooyen.

Alexandra Institution.—Elizabeth Martha Marais, Martha Elizabeth Minnaar, Hazel Alice Dell, Magdalena Anna Elizabeth Louw, Magdalena Maria van Reenen, Anna Jacoba Elizabeth de Beer.

Witrand.—Jacoba Hendrina van Heerden, Clara Marina Tulleken, Dorothy Elizabeth Abbott, Jessie Bergh, Helena Elizabeth Vorster, Joshua Stephen Swanepoel.

Nursing of Mental Defectives.

Calderstones.—Mary Jane Critchley, Mary Cunliffe, Bridget Kerrigan, Aileen Leonora Southworth, Elizabeth Musker.

Caterham.—Ivy Mabel Teall, William John Southwood, Thomas Smith.

Darenth.—Daisy Charlotte Cordingly, Mabel Elizabeth Blocksidge, Mary Maud Castle, Ethel Rose Cavell, Alice Edith Chapman, Violet Georgina Grace, Minnie Belle Jones, Edith Esther Pentney, Doris Estella Martin, Maud Marion Martin, Winifred Higgins.

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Fountain.—Edith Harriett Parkins, Frances Lilian Bell, Stella Mary Webb.

Leavesden.—Monica Mahalah Haseldine.

Manor.—Anne Morgan, Alexandra Iris Mary Phillips.

Royal Albert Institution.—Genista Maud Gresham, Winifred Bilsborough, *Isaac Parsonage, Albert Dulcamara, George Metcalf.

South Side Home.—Amy Huntington Bell.

Stoneyetts.—Janet Nash, Mary McLauchlin.

Bronze Medal and Prize for 1930.

Dissertations for the Association's Bronze Medal and Prize must be delivered to the Registrar by April 30, 1930.

Divisional Prizes for 1930.

Papers certified as eligible for this competition must be forwarded to the Registrar not later than April 30, 1930.

Gaskell Medal and Prize.

The following Regulation has been rescinded on the authority of the Annual General Meeting (Wakefield), 1928:

"(3) A thesis based on original research, if of sufficient merit, may be accepted by the examiners in place of either the written or the clinical examination or both."

The examination for the Gaskell Medal and Prize and the examination for the Certificate in Psychological Medicine will be held at the Maudsley Hospital, Denmark Hill, London, in May, 1930.

Applications for entry to each examination to be made to the Registrar, St. Andrew's Hospital, Northampton.

There is no fee for entrance to the Gaskell Prize Examination.

The entrance fee for the examination for the Certificate in Psychological Medicine is three guineas.

The Nursing Badge.

This Badge, founded at the Annual Meeting (Wakefield), July 11, 1928, can now be obtained from the Registrar. The application must be made on a special form and accompanied by 6*s.*, which includes the cost of engraving the name and registration number of the holder.

The badge is issued for general use, but especially for occasions when the nursing medal is inconvenient or inappropriate. It is fitted with a brooch-pin for women and a crescent-shaped button-hole stud for men.

For full particulars of the Association's Medals and Prizes and the Certificate in Psychological Medicine see "Year Book" prefacing the January number of the Journal.

NOTICES BY THE GENERAL SECRETARY.

Death.

WILLIAM BEVAN-LEWIS, October 14, 1929.

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NOTICES OF MEETINGS.

The Eighty-Ninth Annual Meeting of the Association will be held at Oxford during the week commencing June 30, 1930, under the Presidency of T. SAXTY GOOD, *O.B.E.*, M.A., M.R.C.S , L.R.C.P.

As the accommodation at Oxford is limited it is essential that members desiring to attend the meeting with their wives should communicate with Dr. Good, Littlemore Hospital, Oxford, within the next two or three weeks. Accommodation will be available at three Colleges, at a charge of 10s. 6*d*. per day. This should be booked not later than March 25, 1930. They are :

Lady Margaret Hall.—20 double rooms and 80 single rooms available, from Monday, June 30, to mid-day Friday, July 4.

Somerville College.—Single rooms only, available from Monday, June 30, to Saturday, July 5.

Queen's College.—A few rooms for men only.

Those requiring hotel accommodation should make their own arrangements early.

The Annual Dinner on July 2 may be held in one of the College Halls, and it will be extremely helpful if members desiring to attend will notify Dr. Good as soon as possible, at the same time stating if they intend bringing guests.

Quarterly Meeting.—May 22, 1930.

General Meeting and the Eleventh Maudsley Lecture by Mr. Justice McCardie, British Medical Association House, London.

South-Eastern Division.—Spring Meeting at the City Mental Hospital, Hellesdon, Norwich—date not yet fixed.

South-Western Division.—April 24, 1930, at Hume Tower, Bournemouth.

Northern and Midland Division.—April 25, 1930, at The Lawn, Lincoln.

Scottish Division.—March 28, 1930, at Hawkhead Mental Hospital, Crookston, Glasgow.

Irish Division.—April 3, 1930, at Ballinasloe District Mental Hospital.

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THE
JOURNAL OF MENTAL SCIENCE

[*Published by Authority of the Royal Medico-Psychological Association.*]

No. 313 [NEW SERIES No. 277.] APRIL, 1930. VOL. LXXVI.

Part I.—Original Articles.

THE INCIDENCE OF CANCER IN MENTAL HOSPITAL PATIENTS AND IN THE GENERAL POPULATION OF ENGLAND AND WALES COMPARED.

(*a*) REPORT OF THE INFECTIOUS DISEASE SUB-COMMITTEE OF THE RESEARCH AND CLINICAL COMMITTEE (ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION).

[*First Report.*]

IN the Sixty-fifth Report (1909) of the Commissioners in Lunacy for England and Wales, the following observations were made in respect of the incidence of cancer in mental hospitals and in the general population:

"There remains one morbid condition which is responsible for an increasing number of deaths in the general community, from which it would almost appear as if the insane enjoyed some immunity. According to these figures, the proportion of deaths from "cancer," *i.e.*, from all forms of malignant disease, was in asylums 36·4 per 1,000, which may be compared with the ratio of 99·4 per 1,000 in the rest of the community, the disparity being more marked in the female than in the male sex. Although the mortality-rates per 1,000 living show a rate of 2·98 amongst the insane, and of 1·39 in the others, yet having regard to the great divergence between the general death-rates in the two series, the general cancer mortality in relation to that of the insane is not 1·39, but 8·11. Upon what can this difference depend? Is it because, as suggested in the analogous case of bronchitis, the asylum patient is protected from some unknown factor in the development of this disease; or has it to do with mode of living as well as of environment; or can it be that there is any antagonism between the conditions favourable

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to the development of cancer and those which conduce to insanity? At any rate, in view of these statistics, which seem valid and are confirmatory of those we published two years ago, a thorough investigation of the subject might not be without profit."

The Report goes on to say:

"It may be pointed out that the age-incidence of cancer deaths is almost the same in the two groups, *e.g.*, the proportion at ages 55 and upwards of persons dying from cancer in 1909 was, for the insane, 68·3%, and for the rest of the community, 68·5% of all deaths from this cause above the age of 14.

"The appended table giving the proportion of deaths from cancer (including all forms of malignant disease) amongst the insane during 16 years shows that, as in the community, so amongst this class, the proportion has risen almost continuously. There are excluded from the numbers of the total deaths those which were ascribed to general paralysis of the insane, and in order to limit the computation to subjects of ages 15 and upwards it has been necessary to estimate the total deaths in this group for every year up to 1907. The figures are therefore only approximate, and probably the proportions were actually lower in those years than the table indicates.

INSANE IN INSTITUTIONS.

Proportion of Deaths from Cancer per 1,000 *Deaths from all Causes (General Paralysis excepted) at ages* 15 *years and upwards.*

	Males.	Females.	Persons.
1894 . . .	17·7	35·1	26·9
1895 . . .	18·0	30·8	24·4
1896 . . .	23·6	42·0	32·2
1897 . . .	21·8	31·5	26·7
1898 . . .	20·2	31·0	25·8
1899 . . .	20·7	31·3	26·3
1900 . . .	20·1	32·8	26·6
1901 . . .	23·6	33·2	28·8
1902 . . .	20·9	29·1	25·3
1903 . . .	27·5	33·7	30·8
1904 . . .	29·8	36·5	33·3
1905 . . .	30·1	39·8	35·3
1906 . . .	31·6	32·9	32·3
1907 . . .	30·8	32·2	31·6
1908 . . .	29·8	35·0	32·6
1909 . . .	32·7	39·6	36·4
Mean (16 years) .	24·9	34·1	29·7

In the previous Report referred to (the Sixty-third) the comparative incidence for 1907 is given as:

	Deaths from cancer.	
	Number.	Proportion per 1,000 deaths.
General population . .	31,496 .	93·0
Insane (in institutions) . .	258 .	31·6

It is observed "that the proportion of those dying from malignant disease should be lower amongst the insane in institutions may,

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if it prove to be a general fact, possibly be found to have a bearing on its obscure ætiology." (p. 29.)

In the Tenth Annual Report (1923) of the Board of Control the Commissioners again comment on this disparity, and point out that as regards the incidence of cancer, there has been no such progressive increase in this disease as is believed to have occurred in the general population, and that it might be worth while calling the attention of the Cancer Research Committee to the desirability of a closer investigation of the divergence in the hope that it might throw a sidelight on the unsolved problem of the ætiology of cancer.

Nothing further, as far as was known, was done in this matter until the attention of the Research and Clinical Committee was drawn to it at a meeting held on November 16, 1927, by the Chairman, who proposed that the terms of reference to the newly created Infectious Diseases Sub-Committee should include "to inquire especially into the incidence of cancer, as to whether or not its occurrence is rare in mental hospital patients as compared with the outside population, and, if so, why."

Owing to the unfortunate illness and death of Dr. Branthwaite, the Secretary of this Sub-Committee, its work was held up until the appointment of a new Secretary in January, 1929. One of the first matters proceeded with was this special reference, and at the February meeting a *questionnaire* was approved, which was circulated in April of the same year.

Questionnaire.

1. **Name of Mental Hospital.**

	1919.		1920.		1921.		1922.		1923.		1924.		1925.		1926.		1927.		1928.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Daily average No. of patients .																				
No. of deaths																				
No. of deaths from cancer (malignant disease) . . .																				

3. **State different types of cancer found.**
4. **State site of primary growth.**
5. **State age on admission, and age on death, of each patient dying from cancer.**
6. **Any further remarks or suggestions.**

The replies were considered at the May meeting, and as the information was mostly of a statistical nature, it was agreed to refer them to a professional statistician for report.

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Statistician's Report.

Replies were received from 72 mental hospitals, and the information furnished was in the majority of cases sufficiently full and comprehensive. In some instances, however, they lacked certain details which—though not expressly asked for—it was reasonable to assume would have been supplied; for example, over 40% of the replies failed to distinguish the sexes in respect of Question No. 5 (state age on admission, and age on death, of each patient dying from cancer).

It is to be regretted that the *questionnaire* did not provide for the average number of patients resident in each year to be shown in age-groups, as the incidence of cancer naturally depends largely upon the proportions of each sex living at ages subject to cancer. Had these particulars been given, it would have been possible to make a useful comparison with England and Wales of death-rates for each sex calculated for each age-period of life.

The particulars furnished, however, relating as they do to an average annual number resident of some 70,000 patients during the ten years (1919–1928) under review, provide a useful basis for a comparison of the rate of increase, or otherwise, of the mortality from cancer in mental hospitals with that in the general population of England and Wales.

The statistics collected have been presented as far as possible in tabular form.

Table I shows the number of deaths from cancer in England and Wales with their proportion *per cent.* of the population. It will be observed that persons under fifteen years of age have been excluded in order to bring the age-constitution of the general population into as close a conformity as possible with that of the mental hospital population. A steady increase is shown in the mortality during the ten years. A chart (Chart 1) has been prepared to illustrate, in relation to the mean in each case, the rise or fall for each year of the mortality from all causes and from cancer. In this chart the year 1919 has been omitted; this has seemed desirable on account of the very heavy death-rate from influenza in that year, and its inclusion would have unduly weighted the mean death-rates of the decade, both for all causes and for cancer.

Table II relates to the mental hospitals and shows similar information to Table I, with the addition of particulars as to the number and percentage of deaths from all causes. It will be seen that for the whole period the mortality from cancer shows an increase

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Tables and Charts.

TABLE I.—*England and Wales.*

(Persons aged 15 years and upwards.)

Year.	Deaths from cancer.					
	Number.			Proportion (*per cent.*) of population.		
	Males.	Females.	Total.	M.	F.	T.
1919	18,636	23,324	41,960	0·15	0·16	0·16
1920	19,538	23,932	43,470	0·15	0·17	0·16
1921	20,541	25,289	45,830	0·16	0·17	0·17
1922	21,133	25,538	46,671	0·16	0·17	0·17
1923	21,929	26,504	48,433	0·17	0·18	0·17
1924	22,958	27,183	50,141	0·17	0·18	0·18
1925	23,860	27,839	51,699	0·18	0·18	0·18
1926	24,309	28,660	52,969	0·18	0·19	0·18
1927	24,946	28,919	53,865	0·18	0·19	0·18
1928	25,891	30,132	56,023	0·19	0·19	0·19

CHART I.—*England and Wales.*

(Aged 15 years and upwards.)

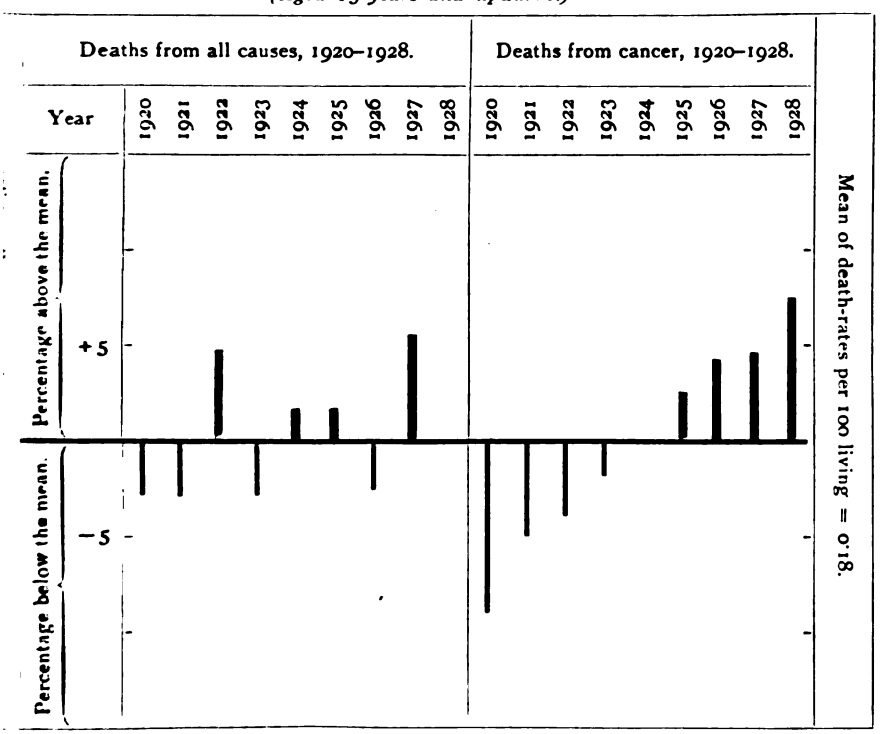

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TABLE II.—*The 72 Mental Hospitals.*

Year.	Daily average number of patients resident.			Deaths from all causes.						Deaths from cancer.					
				Number.			Percentage of daily average number resident.			Number.			Percentage of daily average number resident.		
	Males.	Females.	Total.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1919	26,782	33,608	60,390	3,874	3,670	7,544	14·5	10·9	12·5	54	101	155	0·20	0·30	0·26
1920	27,535	33,937	61,472	2,756	2,698	5,454	10·0	8·0	8·9	59	107	166	0·21	0·32	0·27
1921	29,031	36,461	65,492	2,700	2,811	5,511	9·3	7·7	8·4	79	105	184	0·27	0·29	0·28
1922	30,035	37,621	67,656	2,946	3,118	6,064	9·8	8·3	9·0	88	120	208	0·29	0·32	0·31
1923	31,440	39,367	70,807	2,803	2,626	5,429	8·9	6·7	7·7	85	137	222	0·27	0·35	0·31
1924	32,321	40,583	72,904	2,800	2,896	5,696	8·7	7·1	7·8	94	137	231	0·29	0·34	0·32
1925	33,235	41,368	74,603	2,782	2,861	5,643	8·4	6·9	7·6	112	133	245	0·34	0·32	0·33
1926	34,285	42,258	76,543	2,780	2,827	5,607	8·1	6·7	7·3	88	154	242	0·26	0·36	0·32
1927	35,047	43,285	78,332	3,028	3,113	6,141	8·6	7·2	7·8	97	127	224	0·28	0·29	0·29
1928	35,750	44,551	80,301	2,977	2,991	5,968	8·3	6·7	7·4	113	149	262	0·32	0·33	0·33

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CHART 2.—*The 72 Mental Hospitals.*

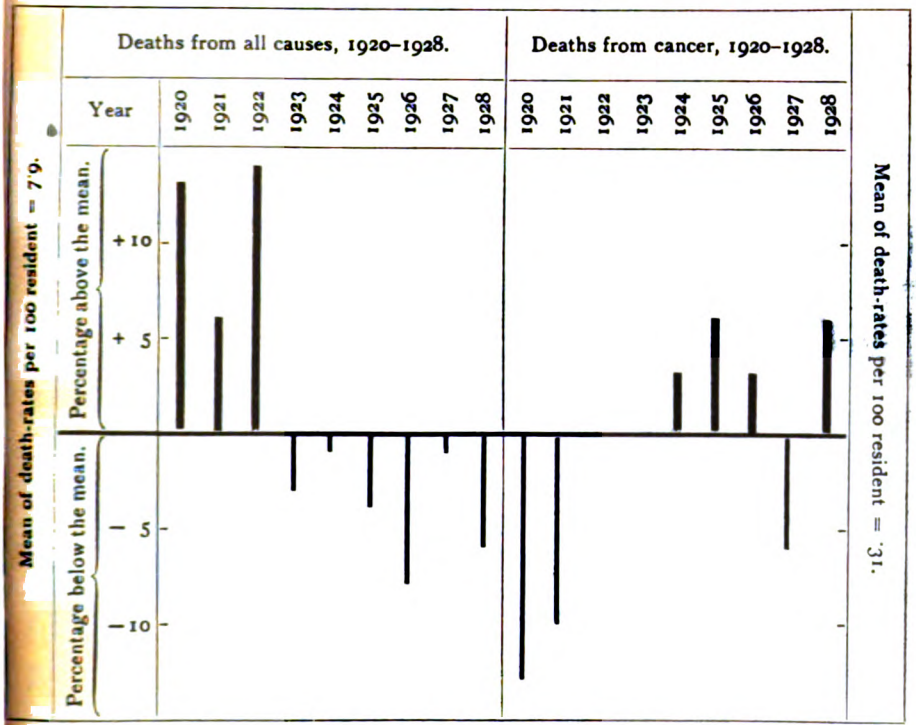

TABLE III.

Year.	England and Wales. (Persons aged 15 years and upwards.)			The Mental Hospitals.		
	Number of deaths.		Proportion of deaths from cancer per 100 deaths from all causes.	Number of deaths.		Proportion of deaths from cancer per 100 deaths from all causes.
	From All causes.	From cancer.		From all causes.	From cancer.	
1919	389,231	41,960	10·8	7,544	155	2·1
1920	341,338	43,470	12·7	5,454	166	3·0
1921	345,723	45,830	13·3	5,511	184	3·3
1922	377,793	46,671	12·4	6,064	208	3·4
1923	353,091	48,433	13·7	5,429	222	4·1
1924	376,579	50,141	13·3	5,696	231	4·1
1925	378,172	51,699	13·7	5,643	245	4·3
1926	369,115	52,969	14·4	5,607	242	4·3
1927	401,641	53,865	13·4	6,141	224	3·6
1928	384,327	56,023	14·6	5,968	262	4·4

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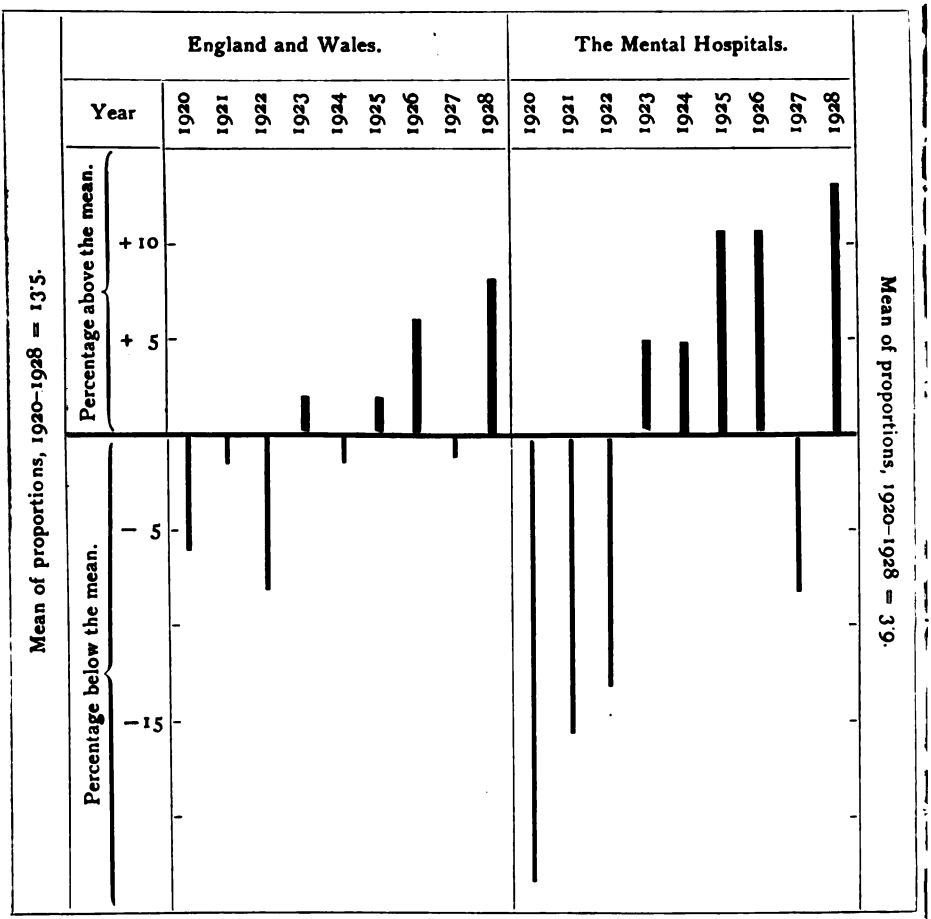
slightly larger than that for England and Wales. In this connection it may be mentioned that the mental hospitals have probably provided a larger proportionate increase than the general community

CHART 3.—*Proportion of Deaths from Cancer per 100 Deaths from all Causes (1920–1928).*



of persons living at ages subject to cancer. This cannot be learned from the *questionnaire*, but it has been ascertained that between the years 1921 and 1927 the proportion of persons aged 45 years and upwards in the population of *all* county and borough mental hospitals in England and Wales increased 29 per 1,000, while in the

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same period the population of England and Wales at those ages increased only 23 per 1,000. It will be observed that the death-rate from cancer in the mental hospitals (Fig. 2) showed a temporary fall during 1927; this may have been due to the large number of deaths from influenza in mental hospitals generally in that year (see 14th Report of the Board of Control, p. 22); the mortality from influenza in the general population in 1927, although heavier than in the immediately preceding years, did not show such an abnormal increase.

TABLE IV.

Age on admission of patients who died from cancer in the Mental Hospitals (1919–1928).	Percentage who died within age-group—						
	Under 25.	25–34.	35–44.	45–54.	55–64.	65 and upwards.	All ages.
Under 25 (63 patients)	6	6	21	27	24	16	100
25–34 (253 ,,)	—	7	18	29	31	15	100
35–44 (413 ,,)	—	—	21	28	32	19	100
45–54 (569 ,,)	—	—	—	37	34	29	100
55–64 (449 ,,)	—	—	—	—	57	43	100
65 and upwards (343 patients)	—	—	—	—	—	100	100
Total (2,090 patients)*	0·2	1·0	6·9	19·9	32·4	39·6	100
					91·9		
England and Wales (deaths from cancer during 1928)	0·9	1·6	6·0	16·5	27·7	47·3	100
					91·5		

* In 49 cases the ages were not stated.

A chart (Chart 2) has been prepared to illustrate, in respect of the mental hospitals, the rise or fall for each year of the mortality from all causes and from cancer in relation to the mean in each case. The year 1919 has been omitted for the reason stated above.

Table III shows, for England and Wales (population aged 15 years and upwards), and for the mental hospitals, the proportion of deaths assigned to cancer *per cent.* of deaths from all causes. It will be observed (Chart 3) that approximately one-seventh of the deaths in England and Wales were attributed to cancer, as compared with one-twenty-sixth of the deaths in the mental hospitals. A chart (Chart 3) illustrates, for England and Wales and for the mental

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hospitals, the annual variations in the proportion of cancer deaths to deaths from all causes in relation to the mean for the whole period (1920–1928), the year 1919 being again omitted.

TABLE V.—*The Proportional Frequencies of all Sites of Cancer expressed as Rates per* 1,000 *of all Deaths from Cancer.*

A. The Mental Hospitals.—Deaths in the 10 years 1919–1928.
B. England and Wales.—Deaths in the year 1927.

International Group No.	Sites.	Proportional rate per 1,000.			
		Males.		Females.	
		A.	B.	A.	B.
43	Lip	7	11	2	1
	Tongue	30	47	4	4
	Mouth and tonsil	25	29	4	3
	Jaw	11	21	9	6
44	Pharynx	0	13	1	3
	Œsophagus	57	62	31	18
	Stomach	242	227	157	164
	Liver and gall-bladder	59	63	77	74
45	Mesentery and peritoneum	11	4	1	7
	Intestines	94	130	87	138
	Rectum and anus	85	104	55	62
46	Ovary and Fallopian tube	..	..	25	38
	Uterus	..	..	163	153
	Vagina and vulva	..	..	12	12
47	Breast	5	2	204	196
48	Skin	21	33	12	16
49	Larynx	30	32	2	7
	Lung and pleura	30	27	6	10
	Pancreas	96	30	68	21
	Kidneys and suprarenals	32	11	10	9
	Bladder	39	30	6	12
	Prostate	32	7	..	..
	Brain and meninges	21	43	33	2
	Bones (excluding jaw)	11	16	4	11
	Other organs	62	58	27	33
		1,000	1,000	1,000	1,000

Table IV shows, by percentages and in relation to age on admission, the age-distribution of the total deaths from cancer during the ten years 1919–1928. Presumably the age on the *last* admission has been furnished, but the *questionnaire* was not explicit on this point. One medical superintendent suggests that age on *first* admission might have been of more value.

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Table V contrasts England and Wales with the mental hospitals in regard to the proportional frequencies of all sites of fatal cancer. The figures given in respect of the mental hospitals refer to only 1,113 of the 2,139 deaths; in the remaining instances the necessary particulars were not supplied.

Types of cancer.—These have proved difficult to summarize in a satisfactory manner—few returns distinguished the sexes, and many had to be omitted altogether as the numbers of deaths concerned were not stated. In the result it has been found possible to summarize only some 30% of the deaths, and these were distributed as follows: Carcinoma 79%, epithelioma 14%, sarcoma 7%.

Finally.—For the period 1920–1928, the death-rates from all causes in the 72 mental hospitals, as compared with those among persons aged 15 years and upwards in the general population of England and Wales, were as 79 : 13 (or six times as high); while a similar comparison of cancer death-rates shows that they were in the proportion of 306 : 176 (or less than twice as high). It appears to be a likely field for investigation as to how far the lower proportion in the mental hospitals of deaths assigned to cancer is explainable by the very heavy death-rates in these institutions from other causes, such as general paralysis and tuberculosis.

Further Remarks.

Of the replies to Question 6 of the *questionnaire*, attention is drawn to the following:

Replies under this heading were received from only five institutions:—

37. Wells: Suggested that the proportion of deaths from cancer *per cent.* of deaths from all causes should be compared for England and Wales and the mental hospitals.
40. Burntwood: Stated that tumours of the brain are rare, although practically all deaths are fully examined *post-mortem*.
48. North Riding: Suggested that inquiry should be made as to the family history of each case to three or four generations.
67. Nottingham City: Suggested that, in relation to Question 5, age on *first* admission might be of more value.
69. Sunderland: Stated that in 48% of the cases the cancer was the principal ætiological factor of the mental disorder; in the remainder it was merely incidental.

J. R. Lord, *Chairman.*
M. J. McGrath, *Hon. Secretary.*

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(*b*) A Study of the Incidence of Cancer over a Period of Twenty-five Years at the County Mental Hospital, Rainhill, by Arthur Pool, M.D., B.Ch.Liverp., M.R.C.P. Lond., M.R.C.S.Eng., D.P.M.

This investigation was suggested by the *questionnaire* issued in connection with the Research programme of the Royal Medico-Psychological Association. It is essentially a statistical study based upon an analysis of *post-mortem* records compiled during the years 1904–1928 inclusive by Dr. G. A. Watson, late Pathologist to the County Mental Hospital, Rainhill, and now Pathologist to the Lancashire Mental Hospitals Board.

In view of the fact that the only "safe diagnosis" of alleged neoplastic material depends upon microscopical examination, we have limited this survey of the incidence of cancer in this mental institution to the cases verified by autopsy. While we realize that this investigation does not reflect the total incidence of cancer, nevertheless the figures thus obtained, diagnosis having been confirmed by microscopic examination in each case, will be a more truthful record than any investigation of total incidence merely based, in some cases, on clinical supposition.

The total number of autopsies performed during those twenty-five years was 3,357, and the total number of cases of neoplasm encountered, 167; *i.e.*, the total cancer incidence is 4·9%. But of these 167 cases, 42 were suffering from the disease on admission to this hospital and died within a period of six months afterwards. Therefore if we exclude these cases from the reckoning we find that the "developmental incidence" of neoplasm in this institution was 125 cases out of a total of 3,315 autopsies, or expressed in percentage, 3·77%.

This figure, 3·77% is extremely low as compared with the corresponding figure of the incidence of the disease in the general community. Thus figures compiled by Dr. D. Hanf, of the Charité Hospital, Berlin, covering a period of twenty-three years (1903–1925), show that for the general population the cancer incidence is 13% of all autopsies, *i.e.*, nearly four times that of this mental hospital.

Similar confirmation of the low institutional incidence of neoplastic disease is forthcoming from other sources, *e.g.*, in the mental hospitals of England and Wales, according to the Board of Control Report for 1922, the cancer mortality was only 3·4%, whereas the figure for the general population was 12·4%.

Furthermore, among the outside community, the incidence of neoplasm has been gradually increasing with the passage of years,

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whereas no such parallel obtains in the figures for this mental hospital.

The accompanying graph (p. 236) illustrates these features. The broken black line shows how the disease has been gradually rising among the general population. The continuous black line indicates the total incidence of the disease in this hospital. The dotted line shows the incidence in this hospital when the cases in which the disease was present on admission are excluded, *i.e.*, "developmental" incidence. It is obvious that the disease as it affects the insane has shown no real change with the passage of years—certainly nothing to compare with the steady increase in the sane community.

The alimentary canal with its associated viscera is the system which shows the highest incidence of the disease. There are 87 cases in all, but this figure includes 21 cases in which the disease was present on admission. These figures yield the following analysis:

SEX INCIDENCE.

Site.	Number of cases.		Sex.	
	Developing in hospital.	Present on admission.	Male.	Female.
Mouth	3	1	4	0
Œsophagus	9	4	4	9
Stomach	21	8	21	8
Small intestine	*Nil*	*Nil*		
Large ,,	9	3	5	7
Rectum	14	3	10	7
Gall-bladder	3	*Nil*	1	2
Pancreas	3	2	2	3
Bile-ducts	1	*Nil*	1	0
Liver	1	,,	1	0
Peritoneum	2	,,	1	1
Total	66	21	50	37

It will be seen that the male sex claims the greater representation in the above series, mainly accounted for by the preponderance of male cases of carcinoma of the stomach. In addition the four cases of cancer of the mouth all occurred in males, whereas the œsophageal cases predominated in the female sex.

Of the three oral cases which developed during residence here, all the patients—males—had been intemperate in habits and were heavy pipe-smokers, thus confirming the oft-noted association between local irritation and the development of cancer. In one of

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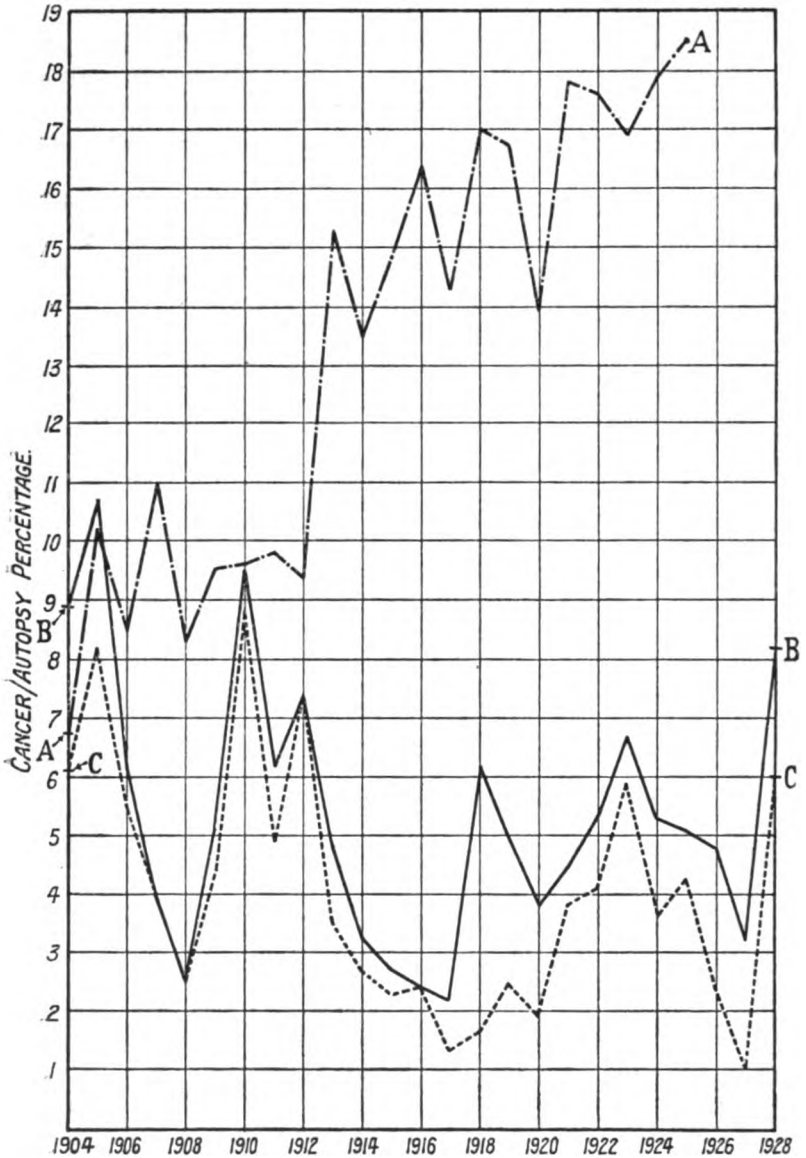

A–A = General community.
B–B = Total incidence, County Mental Hospital, Rainhill.
C–C = "Developmental" incidence, County Mental Hospital, Rainhill.

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these cases there was an additional irritative factor (a badly carious tooth, immediately following the extraction of which cancer was discovered in the gum-socket).

Four of the œsophageal cases were diagnosed on or shortly after admission, and of the remaining nine which developed during residence, five were situated at the lower end and four at the level of the bifurcation of the trachea. In each of the four cases in the latter situation the autopsy notes record pronounced thickening of the trachea adjacent to the growth. Is there a possible association between the development of cancer in this situation and the continual movement of the trachea with each act of swallowing, this acting as a chronic irritative factor in predisposed individuals?

It will be noted that of these 9 cases 7 occurred in the female sex. Now it is stated that cancer of the œsophagus is practically unknown in Chinese women, and the reason given is that it is customary in China for the males to be served first with hot food and drink, and afterwards the females partake of what is left when it has cooled down. On the other hand, in England it is notoriously true that the majority of women are inveterate drinkers of tea (usually at a high temperature). Now in this particular mental hospital it has always been a custom to allow female patients who engage in any ward work (cleaning, washing, sewing, etc.) the privilege of making a "special" brew of tea in the morning and afternoon. Of our 7 female cases 4 were ward workers, and would thus avail themselves of this privilege. The other 3 women did no ward work over periods of thirteen, sixteen and eleven years respectively, and yet they developed the disease. Therefore the above possible sexual determinant and ætiological factor finds no support in this series.

Turning to a consideration of the disease as it affects the stomach we find that there are 29 cases in all, which on analysis show the following locations. Of these 29 cases, 8 were present on admission and died within six months.

Site.	Number of cases.
Cardiac end	2
Lesser curve	5
Greater ,,	1
Anterior wall	1
Posterior ,,	2
Generalized polyposis	2
Diffuse colloid	2
Pyloric vestibule	14

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Thus we see that the pylorus in this series claims nearly half of the total number of cases. Hurst (*Lancet*, November 16, 1929, p. 1026), commenting on the localization of cancer in the stomach, says: "Although the type of gastritis which predisposes to cancer appears to affect the whole or greater part of the stomach more or less uniformly, and although a very large majority of chronic ulcers are situated on the lesser curve of the stomach and in the duodenal bulb, cancer is much more common in the pyloric region than anywhere else in the stomach, and it never involves the duodenal bulb. It is clear, therefore, that there must be some other factor predisposing to the development of cancer when the pyloric region is affected by chronic gastritis or by chronic ulceration, which is present to a much less marked degree in the rest of the stomach, and is completely absent from the duodenum. *This factor is probably friction.*" He then goes on to show that he has based this conclusion on X-ray observation of the pyloric vestibule. Now, whatever may be the essential cause of cancer (inherent predisposition, virus, etc.), there has accumulated a great deal of evidence confirmatory of the fact that the precipitating cause or "trigger" is irritation of some kind. Especially does this apply to the skin and the alimentary tract, and, in the latter situation, the present investigation confirms the *rôle* of friction or mechanical irritation in the ætiology of cancer.

Thus the oral cases have all been associated with the local irritation of pipe-smoking, and in one case with the additional factor of dental caries. In the œsophageal cases no definite factor is forthcoming, but we suggest the possible *rôle* of continued tracheal movement in predisposed individuals as determining the location of cancer in this situation. The predilection of the pylorus as the site for most cases of carcinoma ventriculi is, according to Hurst, explainable by the mechanical friction, caused by the churning movements of the stomach, reaching its maximum in this region. Now it will be noted that there are no cases of neoplasm of the small intestine in this particular series, and as a matter of fact, the incidence of neoplasm in this part of the bowel is practically negligible, so few are the cases recorded. The writer has only seen one case of malignant disease of the small intestine, and that was a sarcoma. Various hypotheses have been expounded to explain this: *e.g.*, it has been suggested that it is due to the alkalinity of the bowel contents. But this is the part of the alimentary tract in which mechanical friction is reduced to the minimum. The contents of the small intestine, apart from completely indigestible

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material, are fluid, and their passage over any one section of the bowel rapid as compared with the other parts of the alimentary tract. In fact an average meal is hot and solid in the mouth, still hot as it traverses the œsophagus and reaches the stomach, and is there brought to body temperature and rendered fluid (this process usually taking 2–3 hours) before being passed on to the small intestine. Here the fluid contents, of optimum temperature, traverse 20 ft. of bowel in two hours or less. Thus the possibility of irritation, both in regard to the type and temperature of the intestinal contents and the time of its action on any one section of the bowel wall, is rendered minimal.

As soon as the colon is reached the neoplastic incidence rises, and what is more noticeable, the disease gradually increases in frequency as we pass from cæcum to rectum. Thus in the present series we record the following:

Site.	Number of cases.	
	Present on admission.	Developed during residence.
Cæcum	*Nil*	1
Hepatic flexure	1	2
Splenic ,,	*Nil*	3
Sigmoid ,,	2	3
Rectum	3	14
Totals	6	23

Now we know that the possibility of fæcal irritation increases gradually as we pass from cæcum to rectum, and the average rate of travel in this part of the bowel is 12 to 15 hours to traverse the 5 ft. Further, the bends or flexures in the canal will offer greater mechanical resistance to the passage of the intestinal contents, and thus these should be the sites of predilection for the cancerous process if there is any truth in the "friction" theory. This is exactly what does occur. Thus cancer of the large bowel practically always occurs at the flexures, and the disease incidence at these sites is directly proportional to the degree of mechanical irritation, this latter factor increasing to a maximum as the rectum is reached.

Pursuing this "friction" theory still further we find that in the present series all three cases of cancer of the gall-bladder were associated with the presence of gall-stones. Of course it may be argued

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that there is no evidence that the cholelithiasis preceded the onset of the neoplasm (the gall-stones may just possibly have been the result thereof). But in view of the fact that gall-stones are comparatively common and gall-bladder cancer uncommon, it is justifiable to assume that the stones preceded the cancer, and in patients predisposed to the development of neoplasm, acted in the *rôle* of irritant.

For the remaining cases of cancer affecting the alimentary adnexa no immediate irritative factor can be assigned, but with regard to the pancreas (5 cases of carcinoma of the head of this organ), it may be indicated that this viscus is in close anatomical association with the pyloric vestibule (which according to Hurst is the subject of much friction due to the churning movements of the stomach in this region); and also in one of the cases of carcinomatosis peritonei the gall-bladder was diseased and contained numerous small stones, and the peritoneal lesion was most marked in the immediate vicinity of the gall-bladder.

The genito-urinary system shows the next highest visceral incidence of the disease—30 cases in all, yielding the subjoined analysis:

CANCER OF THE GENITO-URINARY SYSTEM.

Site.	Number of cases.		Sex.	
	Developing in hospital.	Present on admission.	Male.	Female.
Uterus	11	1	—	12
Ovary	1	*Nil*	—	1
Vagina	*Nil*	,,	—	*Nil*
Kidney	2	,,	1	1
Bladder	3	,,	*Nil*	3
Prostate	1	,,	1	—
Scrotum	2	,,	2	—
Breast	9	,,	1	8
Totals	29	1	5	25

Of the 11 cases of uterine neoplasm developing during hospital residence, 8 involved the cervix, 1 the body, and 2 were sarcomatous degeneration of fibromyomata. Two of the cases of cervical carcinoma occurred in single women. Neither of them, as far as our records go, had borne children. Residence in hospital prior to

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decease was six and seven years respectively. It is a rare occurrence to find carcinoma cervicis in a nulliparous woman. In fact some gynæcologists look upon such an occurrence as evidence of previous syphilitic ulceration (primary chancre) of the cervix. Neither of these cases was investigated from this standpoint, so that we cannot suggest any causative factor in their development. Both cases of sarcomatous degeneration of fibroids occurred in single women.

Of the 9 cases of mammary cancer, 6 were recurrent after operation, and one of the others occurred in a member of the male sex.

Of the remaining cases of genito-urinary neoplasm we may note that one case of adeno-carcinoma of the kidney was associated with renal calculi (these latter possibly acting in the *rôle* of a local irritant).

Primary intra-thoracic neoplasms numbered 8 in all. Three of these were already present on admission and the patients rapidly succumbed. There were 4 cases of mediastinal lympho-sarcoma, 3 of carcinoma of the lung and 1 of cancer of the trachea. Five of these cases occurred in males and 3 in females. In a recent issue of the *Lancet* (December 7, 1929, p. 1181), Davidson, writing on the subject of intrathoracic neoplasm, says, "In common with many of my colleagues I have been greatly impressed with the apparent increase during recent years in the number of cases of primary malignant disease of the lung." He then goes on to quote figures in confirmation of this contention. In our series there were no cases of primary intrathoracic neoplasm prior to 1912; from this date then we have the following incidence:

Year.	Number of cases.
1912	1
1913	1
1914	1
1916	1
1920	1
1922	1
1928	2
Total	8

The remaining cases in the general series comprise the following: Sarcoma of the tibia and sarcoma of the upper jaw, carcinoma of

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the frontal sinus with direct extension through the cribriform plate into the cranial cavity, 2 cases of suprarenal tumour, 2 cases of multiple mixed celled sarcoma, primary site not definite; 2 cases of glandular lympho-sarcoma, one affecting the cervical and the other the inguinal group of glands.

The incidence of neoplastic disease in the central nervous system is as follows: There is a total of 40 cases, including one tumour of the spinal cord. Of these 40 cases, 7 were secondary to neoplasm elsewhere in the body. Thus both tumours of the suprarenal gland had cerebral metastases; two of the breast neoplasms had cerebellar deposits, one uterine cancer had a secondary growth in the inter-peduncular space, and both multiple sarcomata showed scattered cerebral deposits. The remaining 33 cases yield the subjoined analysis:

Type.	Number of cases.
Glioma	4
Gliosarcoma	11
Fibroma	8
Endothelioma	4
Sarcoma (mixed-celled, not of glial origin)	4
Pituitary tumours	2
Total	33

This figure of 40 cases of neoplasm of the central nervous system out of a total cancer incidence of 167 cases shows a percentage of 23·9, thus ranking next in importance to the alimentary system. Of course this high figure is only to be expected in a mental hospital. The figure for the general community is much lower. On the other hand, the mortality figure for cerebral neoplasm based on the total number of autopsies is 1·19%—*i.e.*, one in every hundred cases dies of cerebral tumour.

It is interesting to note that the only two breast cases with cerebral metastases had deposits located in the posterior fossa of the skull involving the dura covering the cerebellum and secondarily invading the underlying brain substance.

Of the dural fibromata (which are benign tumours), 4 were located in the posterior fossa of the skull. All the posterior fossa tumours in this series were extra-cerebellar in situation, and if diagnosed would have been amenable to operative interference. In this connection we have to record that only in 2 of the 40 cases was there any clinical suspicion of tumour, and even in these

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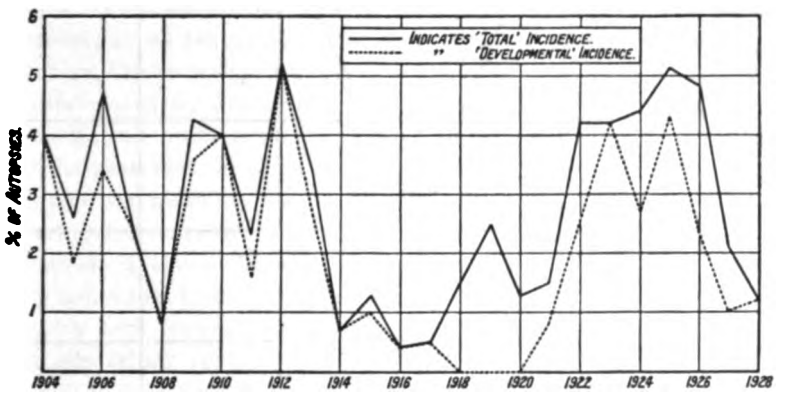
2 cases we have the non-committal diagnosis of "insanity with gross brain lesion." From the patient's point of view the lack of diagnosis is distinctly unfortunate, as at least 4 of the tumours would have been readily amenable to operative treatment.

Such is the figurative review of the incidence of cancer in this mental hospital over the last quarter of a century.

Now considering the figures as a whole the following deductions can be drawn :

1. The sexes are practically equally represented. There are 80 male cases and 87 female cases.

INCIDENCE OF ALIMENTARY CANCER.



2. The average age at death of those cases which have developed during institutional residence is 58 years; for those who were suffering from the disease on admission the corresponding figure is 49 years.

3. It is interesting to note the yearly fluctuation of the incidence of alimentary carcinoma and for demonstration purposes we have drawn up two graphs. The one illustrates the rise and fall year by year, and the other illustrates the change considered in five periods of five years. It is obvious from a glance at them that during the "lean" years of 1916–1920 the "developmental" incidence of alimentary cancer in this institution was very low indeed. Now as far as we can determine the only factor differentiating the "lean" years from those preceding and those following was a dietetic one. The main content of diet was fresh "horse" beans, dried haricot beans and peas. Bread and fat were cut down to a minimum, and what bread there was contained a large element

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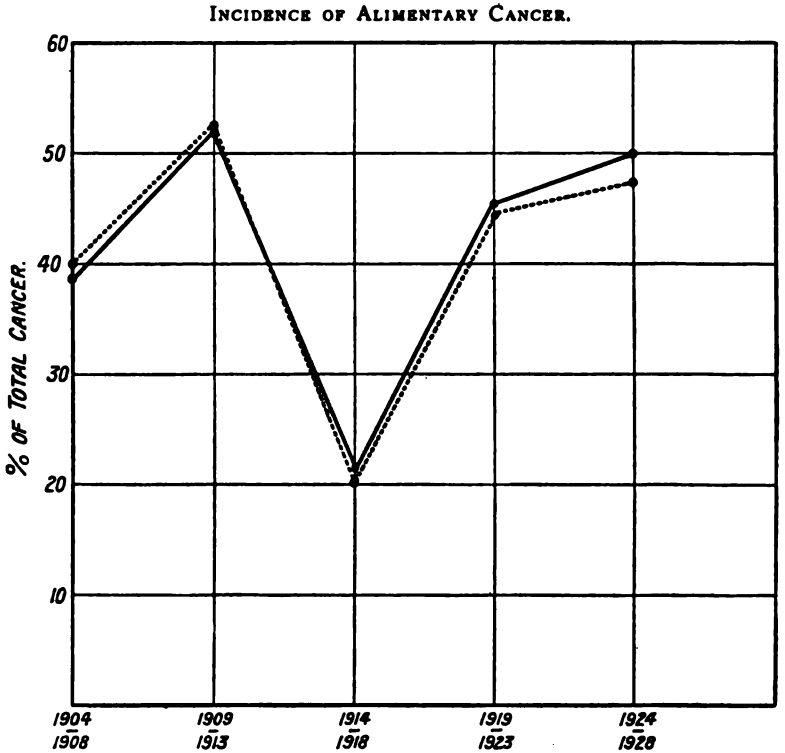
of rough maize flour. Meat (frozen bullock's heart) was allowed two days per week, frozen tripe one day and frozen salted herring one day, the other three days being purely vegetarian in dietary.



Now we do not claim that this dietetic frugality explains the absence or diminution of cancer during these war years. We are simply recording facts. It would certainly be unwise to make sweeping generalizations from such a small number of cases as this series comprises; and in this respect it would be of interest to know whether or not our figures and conclusions would find support from the statistics of other mental hospitals.

I would like to express my thanks to the Medical Superintendent, Dr. Reeve, for his help and kindly criticism.

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THE HUMAN BRAIN.*

By G. Elliot Smith, M.D., Litt.D., D.Sc., F.R.S.,
Professor of Anatomy, University College, London.

Man is distinguished from all other living creatures by the quality and range of his intellect, and on the physical side by the nature of the brain which confers upon him this mental pre-eminence. Moreover, as its exceptional powers were acquired by a process of evolution, the true significance of the human attributes can only be appreciated by examining the history of their development.

The human brain is an instrument so constituted as to impose upon its possessor the vital necessity of cultivating a knowledge of the world and his fellow men. Its distinctive feature is the provision it makes for learning. The very imperfection of the instinctive tendencies it can automatically provoke makes it incumbent on every individual to learn how to live, and to acquire this knowledge from his own personal experience, and by imitating, or learning from his fellow men. Hence the qualities of the human brain distinguish man from all other living creatures by imposing upon him the need to build up rules of life and conduct which are individual and distinctive, and not conformable to any general laws of nature.

The enjoyment of the distinctively human qualities of experience obviously depends largely on special powers of vision, touch and hearing—as well, of course, as taste and smell, with which many other animals are at least as well equipped as we are. The possession of an exceptional aptitude for the cultivation of a high degree of muscular skill, such as we call dexterity, is an essential factor both in the attainment and in the expression of these qualities. But the fundamental element in man's intellectual eminence is the unique character of his powers of vision, the qualities we know by the peculiarly significant words: insight, foresight and the wider vision. The special powers of the human brain confer upon man

* A lecture delivered on Wednesday, March 12, in the Lecture Theatre of the Royal Society of Arts, London. This summary is part of the exposition of man's distinctive attributes from the author's book *Human History*.

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the ability to see the world and what is happening in it with an appreciation of the meaning of visual experience denied to all other living creatures. The comprehension of what he sees, the discrimination of form, colour, texture and of spatial relations, the identification of other individuals, and the ability to read in their gestures and facial expressions something their thoughts and intentions—all these things involve comparison with past experiences of things seen or felt, or of actions accomplished. Apes are probably just as well equipped as we are to see, but they lack the fuller cerebral equipment to interpret the meaning of what they see. They cannot acquire the vast store of complex memories which we have at our command, to compare and interpret the fuller significance of visual experience.

Every human activity involves the principle of continuity, the dependence of our present state of consciousness on our personal experience in the past. The human brain is endowed with the aptitude for making this possible by its almost unlimited powers of recording sensory experience and feelings.

Sight enables us to find our way about, and to know the scenes of our daily life, the hills and dales, the trees and sky, and the various aspects of nature and the kaleidoscopic changes of light and darkness, of brightness and shadow, the colours and shapes of the objects that come within the field of vision, the appreciation of distance and perspective, of size and solidity, of substance and shadow. By vision we learn to recognize our fellows and to distinguish them from one another; to identify their distinctive features, colour and movement; to read in their gestures and the subtle changes in their expressions something of their feelings and intentions, and especially their attitude towards ourselves. The eyes, however, are not merely the instruments whereby we gain all this knowledge; in addition they are the most delicate recorders of our own thoughts and emotions. Almost instinctively we watch the eyes of our fellows. From their direction we can learn something of the objects upon which their gaze and attention are fixed, and the quality of their interest. The most infinitesimal changes in the eyes and eyelids record emotional states which our delicate sense of visual discrimination enables us to detect and interpret, however subtle the changes may be.

Visual discrimination itself could not have attained so high a pitch of efficiency if its development had not been intimately associated with the increase of muscular skill. For the cultivation of skill not only gives the sense of sight a biological usefulness, so

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to speak, to justify and promote its evolution, but such powers of visual discrimination could not have been attained without exceptional precision and co-ordination of the movements of the eyes themselves. As the powers of vision increase they acquire a fuller influence over the animal's posture. The cerebral cortex acquires a direct control over the muscular actions concerned in maintaining the balance of the body, previously automatically controlled by lower parts of the brain, and with this the regulation of the habitual posture becomes a voluntary and consciously regulated action. The attainment of skill depends in large measure upon the cultivation of this voluntary control. By frequent repetition and the elimination of clumsiness and slowness, precise actions and responses attain an automatism which enables the individual to concentrate his attention on the changing circumstances—as the pace and flight of a tennis ball—and use his acquired automatisms of postural regulation and skill in movement to effect his purpose.

Vision conferred on man the upright attitude, and with it a tremendous enhancement of the ability to acquire skill. By doing so not only did its instruments, the eyes, acquire a more advantageous position by being raised higher from the ground, and so acquire a wider range than the crouching attitude of the ape permitted, but the hands were freed to take fuller advantage of their rapidly increasing skill. Man's fleetness of foot and his agility were among the results.

The evolution of vision also was responsible for conferring upon the sense of touch a tremendous increase in delicacy and discrimination. When, under the guidance of sight, the hands became amazingly adaptable and skilful, they became also special organs of tactile discrimination, and this added enormously to the significance of visual experience by helping in the process of acquiring an appreciation of size, form and texture of objects in the outside world. By this co-operation of touch and sight a human being is able to acquire a fuller knowledge of the things he handles. In virtue of these powers he can explore and study his own body. The sense of curiosity was created when the awakening sense of vision first revealed to the startled gaze of man's ancestors the wonders of the world in which they lived. It was the chief factor in stimulating them to handle things, and so incidentally to cultivate both muscular skill in manipulation and tactile discrimination.

The way in which these growing needs were met by the development of the cerebral cortex—the neopallium—as vision gradually became enhanced in importance in man's ancestors is graphically

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displayed. Such progressive enhancement of the influence of vision was only possible in those animals whose limbs had not been subjected to precocious specialization. The fore limbs of the horse, the cat, the bat, and the porpoise, for example, had been variously modified to serve special functions. Fuller cultivation of vision in these animals would have lacked an adequate biological usefulness, as the limbs were too specialized for particular purposes to respond to the new possibilities of skilled use.

But none of these vast powers could be attained until the brain had acquired the ability to record experiences so that visual and tactile impressions could be interpreted by comparison with previous experiences of objects seen and felt. High degrees of muscular skill could be acquired only by prolonged practice and attention to the causes of failure in the past. Man acquired the ability to accumulate knowledge and to interpret the meaning of experience by comparison with memories of previous feelings and sensations. Obviously continuity of experience is an essential quality of human behaviour. Man can interpret his present reaction to the world and to the society in which he lives, and shape his actions to meet the needs of the moment, only if he has the criteria for comparison and the skill acquired by long training to display the appropriate reactions. Thus the distinctively human character necessarily involves the continuity of experience. The historical method of study is therefore essential for the interpretation of human thought and conduct.

The evolution of speech enormously emphasized the significance of man's dependence on his social environment and past history. The comprehension of the meaning of things and actions witnessed prepared the way for the development of speech—which involves the identification of objects in the outside world, for which acoustic labels were invented to form nouns; actions for which verbs were devised; and the development of a high degree of motor skill to emit the sounds. Nor could speech and music be created and appreciated until hearing had been enriched with a fuller meaning than is implied in the mere understanding of emotional cries, in instinctive responses to, or imitations of, cries that have been heard.

A mould of the brain-case of the earliest and most primitive member of the human family at present known to us (*Pithecanthropus*) reveals a very conspicuous and precocious expansion of an area precisely corresponding in position to the part of modern man's brain which is concerned with the appreciation of spoken

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language. The only inference is that speech is as old as man himself. The acquisition of articulate language conferred the rank of humanity upon a simian ancestor. The powerful instrument of speech completely transformed man's mode of behaviour. It made him dependent on his fellows for knowledge, and subjected him to the influence of their erroneous interpretations of their experience.

Man has the seeing eye, the understanding ear, and the skilful hands to shape his own destiny. It is important to get a clear idea of what is involved in the vast increase in man's intellectual abilities when he sees, hears and feels. The instrument that confers upon man his intellectual supremacy is the part of the cerebral cortex known as the neopallium, which attains an important functional significance only in mammals. It is essentially the ultimate destination of these impulses from the eyes, skin and ears that enables us to understand what we see, hear and feel; to associate three kinds of sensory experience so that we can appreciate the various properties of an object which appeals to one or more of three senses, and to compare our present impressions with similar or contrasted incidents in the past.

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PINEAL CYSTS: WITH REPORT OF TWO CASES.*

By Richard Handley, M.B., Ch.B.Manch., D.P.M.

This paper attempts to show how cysts of the pineal body may attain clinical importance, and it consists of what I believe to be descriptive facts rather than conclusions drawn from them or theoretical arguments about such findings.

The following is a brief summary of the anatomy of the normal adult pineal: It is a body about the size of a cherry-stone, with the rounded end forwards, and placed at the back of the third ventricle. It lies on the mid-brain, whilst curving round above and behind it is the body and splenium of the corpus callosum. Separating the pineal from the corpus callosum are several blood-vessels, the largest of which are the veins of Galen—the two small veins uniting above the pineal to form the great vein of Galen. So the important structures in relationship are, above, the veins of Galen and the corpus callosum; below, the mid-brain.

Most books say that the pineal retrogresses and undergoes involution at puberty, but this does not occur to any great degree, since large masses of pineal parenchyma cells are found well on in adult life, and the histological picture of the gland in a person of forty strongly suggests the persistence of good functional activity; but of course, the *proof* of the secretory nature of any gland is physiological. In addition, I think most comparative anatomists now agree that there is no direct relation between the parietal eye of cyclostomes and the human pineal body.

Cysts of the pineal are common. They are usually small and multiple, and seem to be of little clinical importance. But occasionally one of these small cysts enlarges, producing what could be called a middle-sized cyst—usually about 7 mm. across when found *post-mortem*. Cysts of this size appear to be of some clinical interest, and the two cases presented in this paper are of this type.

They occur at the apex of the pineal, and are found in the midline between the superior colliculi below and the splenium above.

* A paper read at the Quarterly Meeting held at the David Lewis Colony, Warford, Cheshire, February 4, 1930.

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This is the narrowest part, and if a cyst manages to push through, it appears from underneath the splenium, as what may be called a large cyst. The two cases to be described here had medium-sized cysts situated in the narrow passage between the splenium above and the midbrain below.

CASE 1 was under the care of one of my colleagues and I did not see her *ante-mortem*. She was a married woman, æt. 42, who was quite well until February 20, when she became increasingly agitated and fretful without obvious reason. She was admitted to Prestwich one week later, and was then in a state of confusion, with marked visual hallucinations. She was found to have a slight weakness of the right arm and leg, and both hands were tremulous; knee-jerks were present. Her pupils reacted both to light and accommodation, but were markedly unequal. She was quiet during the day, but slept badly at night. Her confusion increased, and she died eighteen days after the first onset of symptoms.

Post-mortem.—The brain showed slight congestion of the veins and there was a definite dilatation of the ventricles. There was a cystic mass in the region of the pineal. Nothing else grossly abnormal was found. The pineal mass was examined, and proved to be what I have called a medium-sized cyst.

CASE 2 was under my care and will be described more fully. D. E. H—, a married woman, æt. 42, whose menstruation had recently become irregular and finally ceased altogether. She was quite well until Armistice Day, 1929, except that three weeks previously she had experienced a peculiar lapping sensation above and behind her right ear. This did not bother her much, and passed off after three days. On Armistice Day (which we will call the first day of her illness) she was quite well until noon, but when she was preparing the midday meal she suddenly became dazed, with a severe general headache, though she did not vomit. This passed off after a few minutes. The next day she seemed physically well, but became increasingly anxious, fearing some harm might come to her husband or their home. This anxiety became worse, and she was taken to her doctor and brought to Prestwich on the eighteenth day. On admission I found her silent, slightly confused and anxious, with visual hallucinations and without insight.

She walked rather unsteadily; this unsteadiness increased slightly when she shut her eyes, and she then showed a tendency to fall backwards. There was a slight ataxia with the finger-to-nose test. She could hear quite well. There was no obvious sensory loss and no motor paralysis. Superficial abdominal reflexes were present. Knee-jerks were normal; no ankle clonus; Babinski's sign negative.

Her pupils were of medium size, equal, and reacted both to light and accommodation. The eyes were constantly moving in all directions; the fundi were not examined at the time. On looking to the extreme left there was a definite nystagmus.

On the twentieth day an attempt to examine the fundus oculi was made. The patient was now slightly deaf, particularly on the right side. The nystagmus was now of the third degree, still associated, but of much greater magnitude.

Mentally, the hallucinosis was more acute; she sat up in bed, looking up into the air and talking to some imaginary person and appearing to be answering questions put to her.

On the twenty-second day the patient was somnolent; she had to be wakened to answer questions, would reply briefly, and immediately drop off to sleep again. Her eyelids were never more than half open and I could not persuade her to look upwards. At night she was sleepless.

A diagnosis of tumour in the region of the posterior part of the third ventricle was made.

The confusion became progressively worse, she required hand-feeding, became incontinent, and died on the thirtieth day.

Post-mortem.—The veins of the brain were full. There was a slight excess of free fluid. The convolutions were not markedly flattened. All the ventricles were definitely enlarged. The foramina of Monro were widely patent and the aqueduct of Sylvius was not obstructed. The whole of the medial portions of the superior colliculi were flattened. There was a medium-sized cyst of the pineal.

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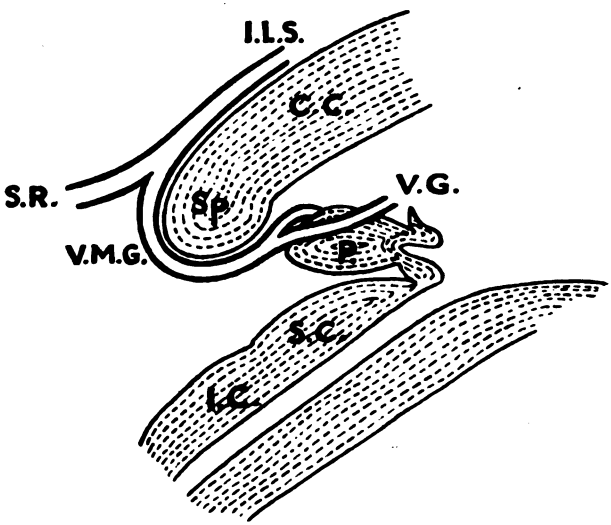
Both pineal masses were similar and about three times the size of the normal pineal. The pineal itself was enlarged and contained several small cysts, but the apex was replaced by a single larger cyst, almost as big as the rest of the pineal. The cyst contained a colourless fluid and the second specimen had a large intracystic papilla.

Microscopically the cysts were surrounded with a glial felting, but many pineal cell-masses were present.



Relations of normal pineal.

Both these cases are so much alike that I think one is justified in postulating a syndrome caused by medium-sized pineal cysts, which by pressure produce a peculiar sequence of psychical states and neurological findings.

Both cases occurred in women about the menopause.

Both began with a period of groundless agitation—preceded in one case by an acute congestive attack. This agitation was succeeded by a period of slight confusion with vivid visual hallucinations. The period of hallucination was gradually replaced by increasing confusion, with somnolence during the day and insomnia at night. Both patients died within a month of the first symptom.

Neurologically, the second case began with an acute transient increase in intracranial tension, but in neither case was vomiting ever present. Both cases had motor weakness, with early but

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slight incoordination. There were early signs of oculomotor disturbance—in one case unequal pupils, in the other increasing nystagmus. This was followed by increasing oculomotor paralysis, with slight deafness.

When diagnosing such a medium-sized cyst of the pineal the important points seem to be:

(1) The age of the patient—about 40: tumours occur between 10 and 25.

(2) The rapid progression—death within a month: tumours take a year or more.

(3) The sequence: anxiety, vivid hallucinations, confusion and sleep disturbance.

(4) Neurologically: increased intracranial pressure syndrome, rapid in onset and of high degree, to some extent simulating a cerebellar lesion; paralysis of eye muscles, together with pupil changes, increasing deafness and tendency to weakness of lower limbs.

Treatment.—Cases are rapidly fatal if relief is not obtained. This may happen—

(1) Naturally: The cyst is able to squeeze through and appear from underneath the splenium. I have seen one such case.

(2) Surgically: By splitting the splenium. This was suggested as a treatment for my second case.

(3) X-ray treatment might be of use.

In conclusion I wish to thank all my colleagues at Prestwich, particularly Dr. David Blair, who has allowed me to report these two cases and helped me in every possible way.

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A BRIEF *RÉSUMÉ* OF THE TYPES OF INSANITY COMMONLY MET WITH IN INDIA, WITH A FULL DESCRIPTION OF "INDIAN HEMP INSANITY" PECULIAR TO THE COUNTRY.*

By JAL EDULJI DHUNJIBHOY, M.B., B.S.Bomb., Major *I.M.S.*,
Medical Superintendent, Indian Mental Hospital, Kankè, Ranchi, India.

HISTORICAL.

INDIA, like many other countries in the world, for centuries held the "demonological conception" of insanity. As late as the eighteenth century the insane were regarded as possessed by evil spirits, and requiring drastic measures to get rid of their afflictions. Under this belief some were mercilessly flogged and others were made to drink or eat nauseating stuff. With the progress of civilization, India, like Europe, began to erect grim, sombre buildings for the treatment of her mentally afflicted, with small openings in the walls, guarded by strong iron bars; narrow corridors, dark cells and desolate compounds, where no tree, shrub or flower ever grew. Moreover, the old asylums were manned by brutal types of attendants, who were always ready to impose manacles and chains and stripes at their own free will. Insanitary conditions and semi-starvation of the patients were special features of these institutions. Of recent years, however, India has been making a steady though rather slow progress in psychological medicine. The old asylums in the Provinces are now called mental hospitals, and the old buildings are either given up, or improved as far as practicable to fit in with their new names. A humanitarian hospital system for the insane has been instituted.

Some of the recently built mental hospitals, such as those at Ranchi and some other places in India, are entirely planned and run on modern western lines, with due regard to Eastern conditions.

* A paper read at the Quarterly Meeting held at the David Lewis Colony, Warford, Cheshire, February 4, 1930.

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Hospital Accommodation.

Excluding the Indian States, the mental hospital accommodation is roughly 10,000, which, indeed, is very poor considering the large insane population, and the fact that there are no private mental institutions, such as one finds in Europe. The existing hospitals are entirely State-aided, and are usually overcrowded.

Proportion of Insane to General Public.

According to the last census, the proportion of insane to general public is 28 or 29 per 100,000 persons. These figures are indeed very low. They mostly include certified insane and mental defectives, for there is no reliable information as to the number of the uncertified cases. The census is the only practical method in India of ascertaining the number of uncertified insane, but unfortunately the people do not adequately co-operate. If they did I am sure the number of persons reported as insane would increase enormously, and might exceed proportionately those of England and Wales.

Types of Insanity Commonly Met with in India.

(1) *Manic-depressive psychosis.*—This psychosis, with its recognized phases, contributes largely to the population of mental hospitals.

(*a*) The types of mania are practically the same as met with in England, but I have always noticed that the majority of Indian maniacs are more filthy, dirty and destructive compared with those I have seen in English hospitals.

(*b*) The types of melancholia are also the same, but the number of the agitated cases is certainly far less compared to those seen in English hospitals.

(*c*) Stuporose phases are often seen in Indian hospitals. This phase sometimes lasts for two to three years, but careful nursing produces good results.

(2) *Dementia præcox.*—This psychosis takes the next place in number; it attacks both sexes, and is prevalent among both the educated and uneducated classes. It is my experience that those Indian communities highly advanced in Western civilization and culture, such as the Anglo-Indians, Parsees, the educated section of the Bengalis, etc., are more prone to this form of psychosis. I have also noticed that the paranoid and the katatonic types are

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more common in educated and the simple and the hebephrenic in uneducated persons.

(3) *The toxic psychoses are next in order of frequency.*—(*a*) In this group hemp drug tops the list.

(*b*) Alcohol is second. Alcohol is largely consumed in those parts of India where the hemp drug is difficult to obtain or is unknown. The types of alcoholic psychosis are the same as one sees in the West. The consumption of opium and cocaine is by no means less in India than elsewhere, yet the mental disorders due to over-indulgence in these drugs are not often seen; in fact, they are very rare.

(*c*) Acute confusional insanity is also not uncommon in India, and in a good many cases the principal ætiological factors are starvation and physical exhaustion. Such cases make a speedy recovery with rest and a good nourishing diet. In fact, this psychosis is one of the few that help to improve the annual Indian recovery-rate on direct admissions, which is estimated at 33·4%.

(*d*) The psychoses associated with infections, pregnancy and the puerperium are also common. Lactation psychosis is more common than the psychoses associated with pregnancy or puerperium, and is largely responsible for acts of infanticide in India.

(4) *Mental defectives* take the fourth place amongst the population of mental hospitals. Only the certified cases are admitted for treatment, and thousands of India's uncertified defectives are at large and not under State control. In addition, there exist no special institutions for the treatment of defectives. The types of defective are the same as one finds in the West. Amongst the certified the imbeciles preponderate over the idiots and the feeble-minded. A certain type of microcephalic imbecile called "Chuvas" (the Indian name for mice) is commonly found in Gujarat. The term "mice" is applied to them on account of the conformation of the cranium, which is flattened, and together with the prominent ears is certainly suggestive of a mouse. They are capable of being taught simple crafts; they are neither immodest nor indecent, and do not, as a rule, show any of the abnormal conduct or depraved habits commonly met with among other types of imbecile. Nothing is known as to how they originate; in most cases no hereditary influence can be traced.

(5) *The fifth place is taken by the following psychoses:* (*a*) *Epileptic insanity.*—There are no epileptic colonies in India, but certified epileptics are treated in separate wards in the mental hospitals. The majority of the epileptic population of the hospitals suffer

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from *grand mal*; *petit mal* seems to be more prone to attack the children and turn them into epileptics idiots. Patients often suffer from *status epilepticus*, and many a homicidal act in India reminds one of the existence of epileptic equivalents. (*b*) *Paraphrenia and paranoia:* These psychoses in India are practically the same as found in the West. Among paranoiacs, exalted, querulant or persecutory cases are more common than the amorous, religious or hypochondriacal. (*c*) *Primary and secondary dementia:* These are also noticed, and the latter contribute largely to the chronic population of the mental hospitals. (*d*) *Senile, traumatic and arterio-pathic psychoses:* These also help to swell the ranks of the insane in India. (*e*) *Encephalitis lethargica:* Recently the sequelæ of this disease, with its various fantastic and classical types, have begun to appear among the population of mental hospitals. The appearance of the sequelæ of this fell disease in mental hospitals in India was pointed out by me in 1924, and I have seen practically all the types one sees in Europe. (*f*) *General paralysis:* This psychosis is extremely rare in India though syphilis is very common; I have not yet seen a case of general paralysis in an Indian who has not been abroad, but I have seen two undoubted cases of the disease in Indians who had been to Europe, and had a history of exposure to infection. Some observers in India claim that they have seen and treated cases of general paralysis among Indians who have never left their country. Various theories have been propounded for this infrequency of general paralysis in India, but none so far are convincing, and much remains to be done in the way of research in this matter. (*g*) The *psychoneuroses* are not often seen in mental hospitals in India, as such cases are rarely certified, but one sees scores of them in one's private practice. Hysterical, anxiety and obsessional states are the commonest types of neuroses. They occur in both sexes equally, and the hysterical and anxiety states are more common than the obsessional.

It will not be out of place to mention here that all the remarks made in the foregoing pages are entirely based on my clinical experience in India.

Indian Hemp Insanity.

There is a special form of mental disease commonly met with in India, which is usually produced by excessive or even prolonged moderate use of hemp drugs in any form. This form of insanity is particularly prevalent in the Provinces of Punjab, Bengal, and Bihar

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and Orissa; ganja is largely cultivated in Bengal, and naturally the use of this drug is very common there. This form of insanity is characterized by symptoms which are of a fairly uniform character, and in a large majority of those afflicted no psychopathic or neuropathic history can be elicited.

Sex.—It is generally confined to the male sex, as most of the addicts to these drugs are males, but I have seen two female cases, and other cases have been reported by medical officers in charge of different mental hospitals in India.

Age.—It generally occurs between the ages of 20 to 40, but I have treated a boy of 15 and an old man of 65.

Historical.

The hemp plant was brought to India from Central Asia, where it is indigenous. The earliest notice of it in India is in the *Atharva Veda*, the reading of which shows that the narcotic property of the plant was then known. The plant, which in Central Asia and Europe was a fibre-yielding species, developed its narcotic property after it reached India. The sudden development of this property on transposition to India was a response to its new environment. The plant, with its new property, spread northwards into the Himalayan valleys, into Tibet, and into China, where, as in Central Asia and Europe, it had existed as a fibre plant. It then proceeded westward as a narcotic, into Persia, Syria, Arabia, Egypt and eastwards to Malaya. This history, therefore, proves that though the hemp passed as a fibre plant from Central Asia to India, it passed back again as a narcotic-yielding plant from India to Central Asia.

The Indian hemp plant (*Cannabis sativa*) grows wild in all the provinces of India. It is prevalent throughout the Himalayas from Kashmir to the extreme east of Assam. For excise purposes the plant is specially cultivated in some provinces in India—for example, ganja in Bengal. The wild plants also yield narcotics. The Indian hemp plant is a tall, erect herb, growing from 3 to 8 ft. high when wild. When cultivated, it is from 4 to 5 ft. high. There are two distinct sexes, male and female.

The Present Use of the Hemp Drug in India.

The hemp plant is used in India in the following three chief forms: (1) Ganja, which is the Indian name applied to a mixture of

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stems, leaves and flowering tops of the cultivated female hemp plant, which have become coated with resin in consequence of having been unable to set seeds freely. In Bengal, ganja is grown in a compact tract of country about 69 square miles in area at Nowgaon in the district of Rajshahi. This area supplies not only the local requirements of the Presidency, but also those of Assam, Bihar and Orissa and the United Provinces, and certain Indian States and foreign territories.

(2) Bhang, siddhi, subji or putti are different Indian names applied to a mixture of the dry leaves and capsules without stems, whether male or female, cultivated or wild. Wild bhang grows all over the Bengal Presidency, but the cultivated bhang required for the Presidency is obtained from Bihar and Orissa, where it is specially cultivated for excise purposes.

(3) Charas is the name applied to the resinous matter which exudes from the flowering heads of the female plant when collected separately.

The hemp drugs are consumed in India as follows:

(1) Ganja is used chiefly for smoking, in the chilum, hookah, tobacco pipe or cigarette. It is generally smoked with tobacco in the proportion of 3 to 1. Ganja has an offensive smell, and in order to avoid it, well-to-do people flavour their pipes with spices, so as to give fragrance to the pipe. The spices commonly used for this purpose are musk, saffron, cloves, cardamoms, rose-leaves and nutmeg. Powerful and noxious drugs are generally introduced in the pipes by those on whom the simple form of ganja has ceased to produce the desired effect of exhilaration and stupefaction. The seeds of dhatura (stramonium), opium, coca, nux vomica and aconite are the commonest ingredients of this class. Ganja is also eaten in pan, and I have seen some patients eating it raw. The habitual consumer indulges in this drug to the extent of from 2 to 8 annas worth daily, according to his income. It is stated by consumers that 2 annas worth of ganja can produce the desired intoxication, but that they get used to it gradually and the amount has to be slowly increased.

(2) Bhang is, as a rule, taken as a decoction. It is the cheapest and the weakest form of the hemp drug. The word "bhang" is applied both to the dry drug and to the drink made from it in the same way as the word "tea" is used. Every bhang drinker who can afford it adds one or the other of the following spices in the preparation of the decoction: anise, fennel, coriander, dill, almonds, rose-water, cloves, saffron, or cardamoms. Here, again, as in the

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case of ganja, the seeds of dhatura or opium, with arsenic, etc., are mixed to produce the desired effect of profound intoxication. Bhang is also eaten in pan or with molasses. A bhang drinker will eat bhang when he has a difficulty in preparing the decoction, especially when travelling by train. There is also a considerable consumption of sweetmeats made with bhang. The sweetmeat is known by the name of "majum" from one end of India to the other. Majum is made of sugar, milk and an essence of bhang, but occasionally ganja and charas are added. (Bhang is sold in the bazaar at 4 annas per tola. A habitual drinker takes half to two tolas per day.)

(3) Charas is smoked in a similar way to ganja, but it is sometimes eaten in the form of pills. It corresponds almost exactly to the preparation known as haschisch in Arabia. Charas, being the pure form of the drug, is very expensive, hence it is used by the well-to-do only. (The cost of charas is Rs. 5 per tola, and the average daily ration of a habitual smoker is a quarter to half a tola.)

Social and Religious Use of Hemp Plant.

It is almost a universal social custom with the Hindus in Bengal and Bihar and Orissa and other provinces in India to offer bhang to guests and members of the family on festive occasions. The hemp plant is popularly believed to have been a great favourite of the god Shiva of the Hindu Trinity, and the drug, more especially ganja, is largely used in religious practices connected with the worship of the god. Religious ascetics, who are regarded with great veneration by the people, believe that the hemp plant is a special attribute of the god Shiva, and this belief is largely shared by the people. Among the Sikhs of the Punjab the use of bhang is common, and it is consumed as an essential part of their religious rites, having the authority of the Granth (their religious scriptures). Charas does not seem to be in any way connected with religious observance. The use of hemp drugs is, as a rule, in no way connected with the social or religious customs of Mohammedans, as the Mohammedan religion condemns such practices.

Toxic Effects of Hemp Drugs.

In considering the effects of drinking bhang and of smoking charas and ganja, it must be remembered that the same active principle is present in all. Hence the effect must depend upon the amount

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of the active principle present, which is smallest in the case of bhang and largest in the case of charas, weight for weight. Hitherto no active principle has been isolated from these drugs, hence it is difficult to compare accurately the physiological effects of the three drugs.

Effect of a moderate dose.—The intoxication varies from moderate to dead drunk. Some become drowsy or semi-comatose, rapidly passing into a dreamy state, with a rapid flow of ideas, often of a sexual nature, ending in a deep sleep. Others go through a phase of increased psychomotor activity before passing into the dreamy state.

Effect of large doses.—These produce excitement, delusions, hallucinations, rapid flow of ideas, a high state of ecstasy, increased psychomotor activity, with a tendency to wilful damage and violence, to be followed by deep sleep and forgetfulness of all but the initial symptoms. This temporary amnesia of all events is highly important from the medico-legal standpoint. It is very difficult to state the duration of the amnesia in both the simple intoxication and the maniacal state. With a view to judging this peculiar and important property, I, in company with friends, on two different occasions drank a moderate dose of bhang and smoked a pipe of ganja. On both occasions I remembered the initial symptoms well, but after that everything was a blank to me, and the friends who did not partake of the drugs and enjoyed the fun at my cost, gave a very amusing and instructive account of my actions under the influence of the drugs, which is omitted here for want of time and space. The experiment taught me the amnesic property of the drugs, and in future I shall not hesitate to believe anyone who commits acts of violence under the influence of drugs and pleads complete amnesia of the crime on recovery.

Hemp Drug Psychosis.

Iban Beitar was the first physician in the East to point out the mental derangement produced by the use of hemp. Makrizi, a writer in Egypt in the fourteenth century, states that in the year 78 Hijra very severe ordinances were passed in Egypt against the use of hemp drugs, and those who did not comply with these orders were subject to the extraction of their teeth, but in 799 Hijra the custom re-established itself with more than the original vigour.

Types.—The following three types of hemp insanity are commonly

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met with in mental hospitals of India: (1) Acute mania, (2) chronic mania, and (3) dementia. The difference between these types is only a question of degree.

(1) Acute mania is the result of prolonged and excessive use of the drug in any form. The symptoms resemble those of ordinary acute mania, with the following differences: (*a*) Hallucinations are visual and auditory, and they refer, as a rule, to beautiful women who are supposed to talk and copulate with the patients. (*b*) The duration of the attack is shorter, and relapses are not so frequent if the drug is stopped at once. (*c*) Recovery is the rule in such cases. (*d*) Complete amnesia of all events is found on recovery. (*e*) A peculiar eye condition. (*f*) A characteristic dare-devil demeanour with an irresistable impulse to wilful damage. (*g*) There is a history of the drug habit, and absence of a psychopathic or neuropathic heredity.

(2) Chronic mania: The symptoms are more or less the same as those described in acute mania, but less severe, and the patients are generally cheerful and boastful, with a sense of well-being. A very rare symptom, complete loss of speech, lasting for a prolonged period after recovery from the hemp drug intoxication, was first described by Dr. Chevers in his book on forensic medicine. I have so far observed complete loss of speech in one case of hemp insanity. The patient understood every word that was said to him and made vain attempts to speak. He suddenly spoke after a lapse of eight years and told me that he understood every word that had been said to him and had made every effort to speak, but had found it impossible to do so. Recently a case of hemp insanity was admitted to the Ranchi Indian Mental Hospital, in which the police report stated that the man had lost the power of speech for nearly two years while at home. A very small number of chronic cases gradually lapse into secondary dementia.

Peculiar eye condition.—This eye condition is almost pathognomonic of hemp insanity, whether the drug be a predisposing or exciting factor. In all such cases a marked conjunctival congestion is seen in the horizontal vessels of both eyes. Recent cases show acute congestion of these vessels, but in chronic cases the acute congestion is replaced by a well-marked line of blood-pigments in the same situation. This was first pointed out by Major G. F. W. Ewens, I.M.S., in 1904. I have seen this peculiar eye condition in all cases of hemp insanity, and also in other cases where hemp was proved to be an exciting cause.

Diagnosis.—A patient admitted to an Indian mental hospital

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with intense excitement, grandiose ideas, tendency to wilful violence and destruction, the peculiar eye condition described above, total amnesia of all events, with an attack of short duration followed by complete recovery, with a history of the drug habit and without a psychopathic or neuropathic heredity is a typical case of "hemp insanity."

Prognosis.—The prognosis is certainly most hopeful. In acute cases nearly 90% and in chronic cases nearly 40% recover.

Post-mortem.—I had the opportunity at Berhampore to perform a *post-mortem* examination in two cases of hemp insanity, and macroscopically nothing abnormal was noted.

Treatment.—The drug can be stopped at once, as its sudden stoppage produces no abstinence symptoms. For the rest, treatment is symptomatic. A good nourishing diet, rest, exercise, regular action of the bowels, etc., are very helpful. I have found hydrotherapy very useful in acute maniacal cases.

Connection of Hemp Drugs with Crime.

Excessive or prolonged use of hemp drugs degrades the mind and character of the consumer and predisposes him to commit crime. Thus hemp is one of the most effectual means of increasing the criminal classes in India. It is also largely consumed by bad characters to fortify themselves for crime. Bhang is a very useful weapon in the hands of criminals for looting ornaments from women of easy virtue, and the sweetmeat majum for looting ornaments from children. It is also a known fact that some persons fortify themselves with an excessive dose of ganja, generally mixed with dhatura seeds (stramonium), for premeditated murders, whether for gain, grudge or revenge. Similarly, sudden or prolonged use of large doses of hemp mixed with dhatura seeds are responsible to some extent for such serious crimes as unpremeditated murder, running amok, grievous hurt, rape, etc., which occur daily in a vast country like India.

Conclusions.

(1) In India, hemp drugs, whether taken in excess or moderation, over a prolonged period, produce a special form of mental disorder, which is characterized by a definite train of symptoms which is fairly uniform in character.

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(2) In the case of psychopaths and neuropaths, hemp plays a secondary *rôle*.

(3) It is proved beyond doubt that the hemp drug is a direct cerebral poison. I put this drug above alcohol, opium and cocaine with regard to injurious tendencies in the causation of insanity in India.

(4) The experience stated herein is confined to the provinces of Bengal and Bihar and Orissa.

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THE BRAIN-LIVER WEIGHT RATIO IN INSANITY.

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The recent publication of two papers by Patterson and Weingrow (1, 2) on the brain-liver weight ratio in epilepsy suggested to the writer that an investigation of this ratio in non-epileptic psychoses as well as in epilepsy might prove interesting.

In the normal individual the weight of the brain may be taken as lying between 44½–50 oz., and the weight of the liver as between 54–64 oz. The average brain-liver weight ratio in the normal is 6 : 7, *i.e.*, about ·86.

Myerson (3, 4) was the first to draw attention to a reversal of the normal brain-liver weight ratio amongst epileptic patients. Thom (5, 6) subsequently confirmed the findings of Myerson.

Myerson studied a group of 20 cases, and Thom one of 42 cases. In both groups senile atrophy could be ruled out (*i.e.*, Myerson's cases ranged from 25–40 years of age, and Thom's 17–45), and emaciation was not present. Myerson found that in 13 of his 20 cases the brain was heavier than the liver, and Thom found the same in 26 of his 42 cases.

Patterson and Weingrow in their first paper found, in a series of 200 selected cases of idiopathic epilepsy, that the general average brain weight of the group fell within the lower limits of the normal range. The general average liver weight was below the accepted normal minimum.

In their second paper they made use of a series of 368 cases, consisting of 250 cases of non-emaciated persons with idiopathic epilepsy, 42 cases of non-emaciated persons with non-idiopathic epilepsy, and 76 cases of emaciated persons with idiopathic epilepsy. They found in the persons with idiopathic epilepsy that the weight of the brain was below normal in 48·8% and the weight of the liver in 69·6% of cases. In cases with non-idiopathic epilepsy the weight of the brain was below normal in 35·7% and the weight of the liver in 71·4% of cases. When both emaciation and epilepsy were present, the weight of the brain fell below normal in 61·8% and the weight of the liver in 85·5% of cases.

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These authors conclude that the brain-liver weight ratio is not constant in epilepsy.

In the present series of cases of insanity, the weights of the brain and liver are presented from a series of 1,934 autopsies on persons of all ages. Of these, 157 were epileptics, 28 epileptics with congenital mental defect, 202 general paralytics, 107 congenital mental defectives, and 1,440 other psychotics.

The average weights of the brain and liver and the brain-liver weight ratio in these groups are given in Table I.

TABLE I.

	Number of cases.	Weight of brain.	Weight of liver.	Ratio $\frac{\text{brain}}{\text{liver}}$; normal ·86.
Epilepsy . . .	157	44·3 oz.	47·7 oz.	·93
Epilepsy and mental defect	28	42·5 ,,	42·9 ,,	·99
General paralysis . .	202	44·4 ,,	48·2 ,,	·92
Congenital mental defect .	107	43·3 ,,	44·5 ,,	·97
All other psychoses . .	1,440	42·5 ,,	45·7 ,,	·93
	1,934	43·4 oz.	45·8 oz.	·94

This table does not convey any definite information except that the weight of the liver in epileptics is 2 oz. above the average for "all other psychoses." The same condition holds for general paralysis, *i.e.*, 2·5 oz. above the average for "all other psychoses." In all these averages the weight of the liver is considerably below the recognized lowest normal, *i.e.*, 54 oz. The diminution in weight of the liver in epilepsy is, however, less marked than it is in the other groups with the exception of general paralysis.

We divide these cases up into those that were thin and emaciated and those that were not, and subdivide these groups into over and under 50 years of age. The results are set out in Table II.

This table on examination yields us several interesting features. In the first place in the non-emaciated epileptics of under 50 years of age, the ratio of brain weight to liver weight, ·87, shows no significant difference from the accepted normal ·86. This ratio is the same for mental defectives and "all other psychoses," with the exception of general paralysis, where we find the ratio to be ·82, due to the disproportion between the cortical wasting in that

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Table II.

Weight.	Thin and Emaciated.								Non-emaciated.							
	Below 50 years of age.				Over 50 years of age.				Below 50 years of age.				Over 50 years of age.			
	Cases.	Brain.	Liver.	Ratio.	Cases.	Brain.	Liver.	Ratio.	Cases.	Brain.	Liver.	Ratio.	Cases.	Brain.	Liver.	Ratio.
Epilepsy	35	44·5	43·8	1·02	24	43·1	39·6	1·09	51	44·6	50·9	·87	47	44·6	51·3	·87
Epilepsy and congenital mental defect	12	40·9	40·5	1·01	..	..	..	..	14	44·1	46·4	·95	2	45·5	43·5	1·04
General paralysis	75	43·1	44·7	·96	22	40·8	39·7	1·03	71	43·5	52·7	·82	34	46·5	52·2	·89
Congenital mental defect	48	40·3	41·2	·98	19	41·6	38·9	1·07	21	44·4	50·8	·87	19	44·5	47·0	·95
All other psychoses	194	44·1	45·7	·96	563	40·2	44·0	·91	117	45·1	51·9	·87	566	43·7	46·1	·95

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TABLE III.

	Cases.	Above normal.				Normal.				Below normal.			
		Brain.		Liver.		Brain.		Liver.		Brain.		Liver.	
		Number.	%.	Number.	%.	Number.	%.	Number.	%.	Number.	%.	Number.	%.
Thom	42	12	28·6	2	4·8	14	33·4	8	19·2	16	38	32	76
Patterson and Weingrow: Non-emaciated.	292	63	21·9	27	9·4	92	32·1	61	20·9	137	47·7	204	71·1
Emaciated	76	9	11·8	1	2·4	20	26·3	10	24·0	47	61·8	65	85·5
Dorset: Non-emaciated under 50													
Epilepsy	51	8	15·7	8	15·7	23	45·1	15	29·6	20	39·2	28	54·9
Epilepsy and congenital mental defect	14	1	7·2	1	7·2	8	56·8	2	14·4	5	36·0	11	78·4
a. General paralysis	71	4	5·6	5	7·0	29	40·8	29	40·8	38	53·5	37	52·1
b. Congenital mental defect	21	5	23·3	4	19·0	5	23·3	3	14·3	11	52·4	14	66·66
c. Other psychoses	117	15	12·8	15	12·8	48	41·0	38	32·5	54	46·1	64	54·7
Totals *a*, *b*, *c*.	209	24	11·5	24	11·5	82	34·4	70	33·5	103	49·3	115	55·0
Dorset: Thin and emaciated under 50:													
Epilepsy	35	7	20·0	3	8·6	10	28·6	3	8·6	18	51·4	29	82·8
Epilepsy and congenital mental defect	12	1	8·3	..	..	1	8·3	2	16·6	10	83·0	10	83·0
a. General paralysis	75	3	4·0	3	4·0	32	42·7	14	18·7	40	53·3	58	77·3
b. Congenital mental defect	48	1	2·9	1	2·9	12	25·0	6	12·5	35	73·0	41	85·3
c. Other psychoses	194	17	8·8	11	5·7	73	37·7	27	14·0	103	53·3	155	80·3
Totals *a*, *b*, *c*	317	21	6·6	15	4·7	117	37·0	47	14·8	178	56·3	254	80·4

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disease and the loss in weight of the liver, which is less than in any of the other disease groups. The figures for epilepsy accompanied by congenital mental defect are not statistically significant.

When we consider the cases of epilepsy of over 50 in the non-emaciated group we find that the epileptic is the only one with a normal ratio! In general paralysis it is near the normal, but in congenital mental defect and "other psychoses" the ratio is raised, owing to the greater reduction of the liver weight in these conditions.

Among the thin and emaciated cases, we find that in the "under 50" division the decrease in the weight of the liver is greatest in epilepsy. The other three groups are all the same with a ratio of ·96–·98. Similarly in the over 50 group in the epileptics the liver shows the greatest reduction, the ratio being 1·09. In the group "other conditions" the ratio is ·91, this being due to the greater brain atrophy in older people.

From this we may be inclined to conclude that the presence of epilepsy in emaciated persons causes a greater reduction in the weight of the liver than can be accounted for simply by the emaciation. The brain would appear to be heavier, 43·8 oz. against 42·1 oz. in the "other conditions," but possibly with a larger series of epileptics the epileptic average might be less. These results for epilepsy are of doubtful statistical value.

Table III shows the results from a slightly different angle. The figures of Thom and of Patterson and Weingrow are included for comparison.

We find that in non-emaciated epileptics of under 50 years of age the percentage of livers below the normal weight is no greater than it is in the "other psychoses," *i.e.*, 54·9%, compared with 55. Similarly in the emaciated cases the difference in percentage is not statistically significant—82·8% compared with 80·4. Both Thom and Patterson and Weingrow report a greater percentage in their non-emaciated cases. Their percentages of brains of less than normal weight in the non-emaciated cases are much the same as the present series.

Conclusions.

1. From the consideration of the brain and liver weights of 157 epileptics in a series of 1,932 autopsies, it is definitely shown that in neither emaciated nor non-emaciated epileptics of either under or over 50 years, does the degree of atrophy of the liver and brain differ from that of the group of psychoses in general. The

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brain-liver weight ratio deviates less from the normal than in other psychoses.

2. In the psychoses in general in the non-emaciated of less than 50 years of age there is a well-marked decrease in the weights of both the liver and the brain. The decrease in weight in the two organs runs parallel, so that the brain-liver weight ratio in this group remains at the normal, ·87.

My thanks are due to Dr. P. W. Bedford for permission to make use of the autopsy records of the Dorset Mental Hospital.

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THE BOLTZ (ACETIC-ANHYDRIDE) TEST IN CEREBRO-SPINAL FLUID.

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THE acetic anhydride test was introduced in 1923 by Boltz (1), who regarded a positive result as diagnostic of syphilis of the central nervous system. The technique of the test is simplicity itself, and is as follows: Place 1 c.c. of spinal fluid in a small test-tube. Add 0·3 c.c. of acetic anhydride drop by drop; shake. Add 0·8 c.c. concentrated sulphuric acid drop by drop; shake. After five minutes examine the colour of the fluid against a white background. A lilac or blue-pink coloration is positive.

Opinions as to the diagnostic value of this test vary considerably. Greenfield and Carmichael (2) made a very exhaustive study of this reaction in cases of general paralysis, tabes dorsalis, cerebral syphilis and various nervous diseases, both organic and non-organic. In addition, they made a complete routine examination of the fluids. Their findings closely resemble those of Boltz himself, save that one of their series of sixteen general paralytics gave a negative reaction, and that the authors do not exclude the possibility that the reaction may be due to an increase in the cholesterol content of the fluid. They further assert that the reaction is not constantly associated with any single one of the usual syphilitic reactions, or any known combinations of these.

Herbert (3), on the other hand, in a recent paper states that no information of diagnostic value is to be obtained from the test, apart from its being a rough guide to the protein content of the fluid, which is better estimated by the usual methods.

Grossman (4), in a communication following the paper by Herbert, states that in his experience of the test in 250–300 cases of all descriptions, the result of the Boltz test has in every case coincided with the Wassermann reaction, and that no correlation was possible between the Boltz test and the protein precipitation tests. He concludes by denying that it is a "crude test," and considers it a reliable, easily performed test in the investigation of neuro-syphilis.

The fluids in the series with which my paper deals were obtained from patients in the County Mental Hospital, Lancaster.

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The accompanying routine examination consisted of the physical characteristics of the fluid, the protein (globulin) tests (Ross-Jones, Pandy and mercuric chloride), the cell content, Wassermann reaction, and colloidal gold test (methods of Lange and Mellanby).

The Wassermann results are expressed as +++, ++, +, +½ or negative.

The protein results are expressed as ++, +, ± or negative.

Analysis of Results.

Positive acetic anhydride reactions. 23 cases gave positive reactions. Of these:

Wassermann reaction was—	Protein reaction was—
+++ in 13 cases.	++ in 11 cases.
++ in 9 ,,	+ in 11 ,,
+½ in 1 case.	± in 1 case.

There is in this group a fairly obvious general agreement between the strength of the Wassermann and protein reactions, and no instance of an entirely negative reaction. The case where the Wassermann was only +½ had 16 cells per c.mm. and protein +. The case where the protein reaction was only ± had 11·3 cells per c.mm. and a Wassermann reaction of +++.

The colloidal gold was of the paretic type in *every case.*

Where one test appeared to be of doubtful significance, the others solved the problem. The cells varied from 147 to 4, with an average of 31 cells per c.mm., so that the cell-count has no connection with the Boltz test.

The case with 147 cells per c.mm. was Wassermann +++, protein ++.

The case with 4 cells per c.mm. was Wassermann +++, protein +.

The diagnosis in every case is general paralysis (1 case tabo-paralysis).

Negative acetic anhydride reactions. 25 cases gave negative reactions. Of these:

Wassermann reaction was—	Protein reaction was—
+++ in 2 cases.	++ in 5 cases.
++ in 1 case.	+ in 6 ,,
+ in 8 cases.	± in 4 ,,
Negative in 14 ,,	Negative in 10 ,,

The cells ranged from less than 1 per c.mm. to 2 cases with 205 and 141 per c.mm. respectively. The next highest cell-count was

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48, and the average, not counting the two exceptional cases, was 11 per c.mm. The diagnosis of the 25 cases was as follows:

General paralysis . . .	10 cases.
Juvenile general paralysis . .	1 case.
Non-organic cases . . .	5 cases.
Epilepsy	4 „

Tabes dorsalis, tuberculous meningitis, cerebral hæmorrhage, brain tumour, cerebellar abscess, 1 case of each.

The cases diagnosed as general paralysis comprise the 11 with positive Wassermann reactions. The diagnosis was in each case amply supported on clinical grounds or verified *post-mortem*. The colloidal gold curve of the paretic type. One or two of these cases, including one with a cell-count of 205, have undergone malarial treatment followed by a course of tryparsamide, and have been discharged with good remissions, *i.e.*, diminished protein, altered gold-sol curves, but still Wassermann-positive in the cerebro-spinal fluid.

Summary of Results.

Of 23 cases which were Boltz-positive, *all* were cases of general paralysis and all showed other syphilitic reactions.

Of 25 cases which were Boltz-negative, 11 showed positive syphilitic reactions and 14 were completely negative in that respect.

Taking the cases of general paralysis for which the Boltz test is supposedly specific, we find that in 34 cases, 23 were positive and 11 negative. One is therefore forced to the conclusion that whereas a positive result is an additional confirmation of neuro-syphilitic disease, a negative result has no particular significance. The question whether it could be of assistance in deciding the diagnosis of a particular case has not arisen in this series. I should be doubtful of attaching much weight to the value of a test which can be fallacious in 30% of a series. In actual experience, apart from the clinical study of a case with, say, indefinite protein reactions, weak Wassermann or only slightly raised cell-count, I should be much more influenced by the result of the gold-sol test than by either a positive or negative Boltz.

Effects of Treatment on the Boltz Test.

The effect of treatment on the test is mentioned by Greenfield and Carmichael, who quote Harris (5) to the effect that malarial

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treatment, though changing the strength of the Wassermann, did not affect the acetic anhydride test. Cases 1, W. R—, and 2, J. R—, in the accompanying table seem definitely to disprove Harris's assertion and to be in agreement with Silverston (6), who, in his detailed and painstaking studies of the effects of treatment, reports a progressive change to a negative reaction following malarial therapy, as does also Fleming (7). It is of interest to note that while Fleming had 9 positive cases that became negative after treatment, he describes one case in which a negative reaction became *positive!*

Case.	Ross-Jones.	Pandy.	Mercuric chloride.	Cells per c.mm.	Colloidal gold. (M. = Mellanby's, L. = Lange's method.)	Wassermann reaction of cerebro-spinal fluid.	Boltz test.
1. W. R—: Before treatment	1 +	1 +	1 +	4 s.l.	M. 5555554440 L. 5555544400	+ + +	Positive.
After treatment .	1 +	1 +	±	7 „	M. 5555544000	+ +	„
Later . . .	Negative	Negative	Negative	3 „	M. 0011000000 L. 0001000000	Weak +	Negative.
2. J. R—: Before treatment	1 +	1 +	1 +	27 „	M. 5555522110	+ + +	Positive.
After treatment .	Negative	±	±	4 „	M. 1144440000	+ +	Negative.
3. R. W. D—: Before treatment	2 +	2 +	2 +	205 „	M. 5555433210 L. 5555543310	+ + +	„
After treatment .	±	±	±	8 „	M. 4444221100	+ + +	„
4. R. L—: Before treatment	2 +	2 +	1 +	35 „	M. 5555554410 L. 5555221000	+ + +	„
After treatment .	±	±	±	3 „	M. 5555410000	+ +	„

Steele and Nicole (8) state that the reaction is more sensitive than the globulin tests and remains unaltered for a longer period during treatment. Cases 3, R. W. D—, and 4, R. L—, are interesting in that they are classical cases of general paralysis with negative acetic anhydride reactions both before and after treatment. The very high cell and protein content together with the +++ Wassermann and typical gold curves are noteworthy. Both have markedly improved clinically and have left the hospital.

Complaint may be made that I have not given figures for normal cerebro-spinal fluids. I will add therefore that I have records of about 70 negative results in fluids from cases other than general paralytics, but have not the corresponding findings in full as to the protein, cells, Wassermann, etc., and they were not therefore included in my tables.

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The Boltz test has been noted by Greenfield and Carmichael as remaining positive in fluids kept in the ice-chest for a week. I have also noticed that the Boltz test remains unaltered if fluid is again withdrawn *post-mortem*, at least for some considerable time. For another purpose *post-mortem* specimens were being taken at various intervals after death. The majority of these were from deaths other than from nervous disease, and gave negative results. The positive results were mainly from general paralytics. Three *post-mortem* results seem of interest. The first was a case of tuberculous meningitis. Twelve hours *before* death, protein tests negative, Wassermann negative, colloidal gold 0000022210, Boltz test *negative*; 12 hours *after* death protein tests all positive, Boltz test *positive*. The appearance of protein and the coincident alteration in the Boltz are noteworthy. The second case was one of cerebral hæmorrhage (3 hæmorrhages in 6 months), where the gold-sol and Wassermann were negative, the protein 1+, and the Boltz *positive*.

The third case was one of carcinoma of the breast, who died after three days' jaundice. Here there was *great excess of albumen*, slight globulin reactions combined with a *negative* Boltz.

The causal factor in the acetic anhydride test is not definitely known. The substance causing the reaction is stated by Boltz not to be destroyed by boiling, and to have nothing to do with excess of globulins, but to be thrown down with the globulins in the Noguchi test. Herbert regards it as a protein reaction similar to the glyoxylic tryptophane test, and a rough guide to the protein content of the fluid.

Grossman (9) thinks that cholesterol is responsible for the test, minute quantities of that substance being kept in solution by the protein in the fluid of a neuro-syphilitic patient. Boltz disagrees with this view, on the statement of Weston that the cholesterol content of general paralysis fluid is not outstandingly high. Poynder and Russell (10), however, found measurable quantities of cholesterol associated with the protein in 30 out of 36 general paralytics, and negligible amounts in other conditions.

Without expressing any final conclusions about the interpretations to be placed on them, I venture to record the following personal observations made at various times:

1. The causal factor is heat-resisting (heat to boiling).

2. A case with no globulin reaction and a negative Boltz test may become positive on the appearance of globulin in the fluid.

3. Solutions of egg white or diluted milk give a positive reaction.

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4. Solutions of egg albumen and blood albumen of the same strength show much more intense reactions in the egg albumen.

5. The substance responsible resists *post-mortem* changes for some time.

6. The presence of a few red blood-corpuscles contaminating a specimen does not necessitate a positive reaction.

7. A positive Boltz reaction may occur with a very weak globulin reaction and *vice versâ*.

8. The introduction into a fluid of cholesterol in amounts roughly corresponding to the quantities found by investigators does not give the reaction.

9. The most important finding is that the test is *not* 100% positive in general paralytics.

Finally, in order to settle the question more definitely, I hope that others may be prompted to give their observations, even if only on a comparatively small number of fluids.

I desire to express my thanks to the medical superintendent, Dr. R. P. Sephton, for his permission to record these results.

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THE EXCRETION OF PHENOLS IN MENTAL PATIENTS.

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SINCE the publication of the last number in the author's present series of papers (Stewart, 1929), four articles have appeared which bear upon the subject. They are by the following writers: Mutch, Scheiner, Mann and Shipp, Shera.

Mutch (1929) considers that the excretion of p-hydroxyphenylacetic acid in the urine is the best indication of serious intestinal putrefaction, since it gives evidence of a bacterial attack on tyrosine with the formation of tyramine. The latter substance is excreted as p-hydroxyphenylacetic acid. This decomposition of tyrosine is much more important than that of tryptophane, the indication of which is indicanuria. Tyrosine, being split from the protein molecule at an early stage of digestion, is exposed to attack at a higher point in the intestine than is tryptophane. Bacterial decomposition of tyrosine is associated with (1) ileal stasis, (2) with a hundredfold increase of the coliform bacteria in the ileum, and (3) with hypochlorhydria. Toxic substances are readily absorbed from the ileum, but only with difficulty from the colon.

Scheiner (1929) shows that the tyrosine phenol uric acid reagent of Folin and Denis reacts not only with these substances, but with a very large number of other bodies, both organic and inorganic. All colorimetric determinations made with this reagent should therefore be regarded as erroneous.

Mann and Shipp (1929) write in criticism of the chemical methods applied to investigate the end-products of intestinal toxæmia in the urine. They consider that the black reaction of Buscaino is due to diminution of chlorides in the urine and not to the presence of unknown toxic substances. Referring to a previous paper by the present writer (Stewart, 1929), they bring up several points which will be considered in succession: (1) That during urine investigation (*a*) the food intake should be controlled, and (*b*) the urine specimens collected at the distinct physiological periods of daily life. But (*a*) there is, of course, no such direct relation between protein food and putrefactive end-products as there is between protein food and urea. The only precaution necessary in this

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investigation is to ensure that the diet is not so nitrogenous as to increase or produce putrefaction. The question which we have to answer is whether *under ordinary conditions of diet* our patients suffer from intestinal toxæmia or not. The diet supplied in any well-managed mental hospital, being predominantly lacto-vegetarian and carbohydrate, is well adapted for the purpose, and these investigations are already sufficiently troublesome for patient, nurse and clinical pathologist without the addition of any unnecessary conditions. (*b*) The hours which correspond best with the physiological periods of daily life are those given in the paper referred to, the three six-hour periods ending midday, 6 p.m. and midnight being post-prandial, while that ending 6 a.m. is fasting. Two of the periods are diurnal and two nocturnal.

(2) Mann and Shipp deprecate the use of Jaffé's test for indican in place of Jolles's. They claim that by the latter test indican can be demonstrated in nearly all normal and pathological urines—an opinion with which the present writer agrees. It is, however, of small importance to find 0·0003% of indican in any urine; what we do require is to know when it is present in excess, and the simpler Jaffé test shows this as well as the more prolix Jolles. Mann and Shipp also claim that by improved technique it is possible to find less intense indicanuria in mental patients than in sane controls. The same results are given by the Jaffé test. Of course anyone specializing in tryptophane should use the more delicate technique.

(3) Mann and Shipp further write: " In the estimation of such minute traces by methods involving solvent extractions it is essential to carry out estimations on solutions of the pure substances and of mixtures of these substances to prove (i) that recovery is quantitative, and (ii) that the colour developed by the Millon reagent is proportional to the amount of the substance present." In regard to the methods for phenol and p-hydroxyphenylacetic acid, the present writer was under the impression that these were part of the ordinary routine of bio-chemistry. In the estimation of imidazoles a standard series of solutions of either histamine or histidine is put up on each occasion, and without exception these tests have shown the characteristic change of colour from yellow to red most marked between 0·01 and 0·005%. A graduated standard series of phenol solutions treated with Millon's reagent is also put up for every phenol estimation, and they have invariably shown the same series of colours, ranging from a dark turbid red at 0·05% to the faintest perceptible pink at 0·0001%. It would not be justifiable to print a series of dated experiments each giving the same result.

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Nevertheless the present writer recognizes that the technique described could be improved. He proposes to describe certain improvements in the present paper, and will always be glad to receive suggestions on these problems of acknowledged difficulty.

Shera (1929) finds that *B. acidophilus* occurs in greatly reduced numbers in the intestinal flora of the insane, and as it is the only helpful member of that flora, its reduction or absence allows coliform and other putrefactive bacteria to multiply unchecked.

The present paper contains analyses of urine which add to the data on which a judgment may be formed regarding the following question—Is there an increase in the excretion of the end-products of intestinal putrefaction in acute psychoses, and more particularly of the end-products of tyrosine decomposition?

In considering these analyses we must remember that bacterial digestion of amino-acids takes place in two modes: (1) in the presence of glucose or glycerin, from which the bacteria produce an acid reaction in the medium, (2) without carbohydrate and in alkaline surroundings. In the first case tyrosine gives tyramine and p-hydroxyphenylacetic acid, while tryptophane gives indolethylamine and indolacetic acid. In the second case tyrosine gives phenol, and tryptophane gives indole and skatol. Opinions differ as to the fate of histidine, Koessler and Hanke asserting that histamine is formed only in an acid medium, while Twort obtained this substance in alkaline surroundings.

On the evidence available we are hardly justified in asserting that one of these modes of fermentation takes place in the small intestine and the other in the large. Nevertheless it is obvious that glucose and glycerin are more likely to be found in the former, and Mutch (1929) has observed that an increase of coliform bacteria in the ileum is associated with an increase of p-hydroxyphenylacetic acid in the urine. We also know that when putrefaction takes place in the colon the contents become alkaline and the acidophil bacteria are greatly reduced (Cannon and MacNeese, 1923; Shera, 1929). It is therefore highly probable that acid fermentation does take place in the small intestine and alkaline fermentation in the colon.

The series of cases forms a continuation of those published previously (Stewart, 1929). The Table shows analyses from (A) the night urine of nine men in average health, who were not complaining of illness and were carrying out their day's work. Numbers 2–4 have been published previously. (B) A case of subacute intestinal obstruction situated low down between sigmoid

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	Type of urine.	Quantity c.c.	Specific gravity.	Grm. per 6 hours phenol.	p-Hydroxy-phenyl-acetic acid.	Indican.	Indol-acetic acid.	Urea.	Imida-zoles.
A. Normal controls:									
1. 10 p.m.–8.30 a.m.	..	370	1022	·0076	·0031	+−−	·0	5·49	..
2. 10 p.m.–6 a.m.	..	600	1016	·0036	·0054	..	·0	..	·49
3. 10 p.m.–6 a.m.	..	240	1020	·0084	·0021	..	·0	..	·0
4. Midnight–6 a.m.	..	240	1030	·0139	·0088	..	·0	..	·0
5. 11 p.m.–8 a.m.	..	550	1024	·013	·0044	+	·0036	8·06	..
6. 10 p.m.–6 p.m.	..	460	1018	·013	·0103	+−−	·0025	7·23	..
7. 10 p.m.–6 a.m.	..	375	1022	·0132	·0089	±	·0005	6·7	..
8. 10 p.m.–7 a.m.	IC	250	1027	·035	·022	++	·005	5·4	..
9. 11 p.m.—7 a.m.	CI	500	1015	·0551	·0168	±	·0	6·7	..
B. Subacute intestinal obstruction:									
Noon–8 p.m.	C	170	1030	·13	·0047	+++	·0095	3·44	·38
8 p.m.–4 a.m.	..	227	1014	·0173	·003	±	·0062	2·04	·21
4 a.m.–8 a.m.	CI	320	1016	·157	·029	+	·012	6·24	·6
8 a.m.–noon	CI	640	1008	·094	·029	0	·0172	8·64	1·2
C. Carcinoma of liver:									
10 p.m.–6 a.m.	IC	1,000	1020	·0435	·1125	+	·0	..	·75
10 p.m.–6 a.m.	IC	900	1014	·038	·05	0	·0	..	·33
D. Stupor:									
10 p.m.–7 a.m.	IC	550	1014	·035	·04	0	·0007	5·3	·16
10 p.m.–7 a.m., improving	..	570	1014	·019	·014	0	·0007	5·7	·0
E. Acute mania. T.B. con.:									
6 p.m.–midnight, 17.i.29	..	1,200	1012	·0045	·0072	0	·0	..	·26
Midnight–6 a.m., 18.i.29	C	300	1016	·177	·0045	0	·0	..	·37
6 a.m.–noon	..	450	1014	·0049	·0085	..	·0054	..	·16
Noon–6 p.m., 19.i.29	..	420	1022	·04	·015	..	·0008	..	·39
F. Confusional insanity:									
1. Noon–6 p.m., 28.i.29	CI	450	1030	·126	·0216	..	..	..	1·12
Noon–6 p.m., 29.i.29	..	120	..	·0116	..	..	..	..	·0
2. 6 a.m.–4 p.m.	..	399	1034	·012	·009	++	·0	3·8	·29
4 p.m.–7 p.m.	..	114	1032	..	·0075	++	·0	4·7	·42
7 p.m.–6 a.m.	..	283	1030	·0081	·0134	±	..	3·8	..
G. Dementia præcox:									
24 hours	..	1,740	1016	·0256	·0108	0	..	5·6	·16
H. Melancholia:									
1. 24 hours	..	480	1038	·0247	·0057	0	·0014	4·3	·0
2. 6 a.m.–noon	C	70	1031	·054	·0026	+++	·0025	1·7	·35
Noon–6 p.m.	C	78	1030	·0379	·001	+++	·0028	2·1	·19
6 p.m.–midnight	C	117	1023	·0341	·0015	+++	·0043	2·3	·14
Midnight–6 a.m.	..	68	1020	·0198	·0006	++	·0008	1·2	·98

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and rectum, attended with extreme flatulent distension, which was relieved by passing a rectal tube. The type of fermentation disclosed was at first colonic, with greatly increased phenol and indican, and after relief of the symptoms about 8 p.m. diuresis occurred with decrease of phenol and indican, but increase of both p-hydroxyphenyl and indolacetic acids—a change which suggests that the bacterial disturbance which began in the colon was passing upwards, in the same way as a common cold passes from nose to pharynx, trachea and bronchi. The diuresis was accompanied by an increase of urea and imidazoles.

(c) Advanced carcinoma of the liver, showing the increase of p-hydroxyphenylacetic acid which is said to occur constantly in that disease; it is interesting to note that there is no corresponding increase of indolacetic acid. (D) A case of stupor in a non-psychotic, lasting for only two days. The patient had had a similar attack two years previously. The morning urine of the first day (25.ii.29) was unfortunately not measured, so that it was not possible to work out the quantities of phenol, etc., in grammes; it was of high specific gravity—1032; phenol 0·0187%, p-hydroxyphenylacetic acid 0·015% (nearly double the percentages in the specimen taken the following night), with a very strong Jaffé reaction and urea 2·6%. The only other urine in the series which had an equally high specific gravity is (F) 2, and this had p-hydroxyphenylacetic acid of only 0·0038%. Both these urines were sugar-free. There was therefore evidence of both ileal and colonic fermentation.

The next case (E) is of particular interest. It concerns an attack of acute mania in a young man who had had several previous attacks of the same kind, and who was under constant observation. The date, 17.i.29, is that on which earliest definite symptoms occurred. He was not suffering from constipation of neglect. It will be seen that with a very dilute urine he was passing a relatively large amount of p-hydroxyphenylacetic acid (0·015%, or 0·076 grm. per 6 hours), with little phenol and no indolacetic acid or indican. This is the condition which one would expect to find in the urine if tyramine were being absorbed from the ileum; it did not, however, continue, but changed to the "colonic" type, with high phenol. The tryptophane derivatives remained persistently low. (F) Two cases of confusional insanity. In the first case there is increase of phenol; in the second the high specific gravity is partly explained by a very slight glycosuria. (G) Dementia præcox in an acute phase shows no increase of the substances under consideration. (H) (I) Profound stupor in a young woman. The urine contained a trace

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of acetone, but no sugar. (2) Showed marked increase both of phenol and indican.

Summarizing, we see that even persons in apparently good health may pass considerable quantities of phenol, p-hydroxyphenylacetic acid, indican and indolacetic acid. These quantities are, however, greatly exceeded in intestinal obstruction and cancer of the liver. They are also exceeded in three out of six psychotics studied.

The derivatives of tyrosine may be increased without any corresponding increase in the derivatives of tryptophane, as in cases A9, C, D, E. The increase in the carboxyl acids may be quite out of proportion to the increase in phenol or indican (cases A8, C, D), and *vice versâ* (cases B and H2).

Methods.

Determination of phenol.—To 86·6 c.c. of urine add 13·4 c.c. of hydrochloric acid (sp. gr. 1·16): boil under a reflux condenser for one hour; phenol is thus liberated from the ethereal sulphates. Take 11·5 c.c. of this hydrolysed urine, corresponding to 10 c.c. of crude urine, in a 100 c.c. flask; add saturated potassium hydroxide solution to alkalinity and again acidify with 20% nitric acid. This manœuvre prevents hydrochloric acid from coming over into the distillate, where it would interfere with the Millon reaction. Distil over three fractions of roughly 4, 3 and 2 c.c. Measure the three fractions carefully. The "phenol" standard should consist of a mixture of phenol 1 part and p-cresol 3 parts. A stock solution should be kept, phenol 0·5 grm., p-cresol 1·5 grm. in distilled water 100 c.c., and this is diluted as required to give the following percentages of the combined phenols: 0·0125, 0·00625, 0·0031%.

The three fractions of the distillate and 5 c.c. of each of the dilutions of the standard are poured into six separate gauged comparator tubes; Millon's solution is added, 2 drops from a Dreyer pipette for each c.c. of solution, the tubes are shaken and placed in a boiling water bath for three minutes and then in a rack to cool. The values of the three fractions of the distillate can be judged approximately with the comparator and more accurately with the colorimeter.

Calculation: The phenol percentage of each fraction is multiplied by the volume of the fraction in c.c., the three resultants are added, and the sum divided by 10 to give the phenol percentage in the original 10 c.c. of urine.

Becher, Litzner and Täglich state that the proportion p-cresol 3 to phenol 1 is that which occurs in the human blood and urine. Cresol gives a stronger colour with Millon's solution than does phenol; if two equally strong solutions of (1) phenol and (2) the above cresol-phenol mixture are compared in the colorimeter with the phenol solution at 20 then the cresol-phenol will read off at 11. My own figures in the present and in the previous paper have been calculated from pure phenol standards; therefore to compare them with cresol-phenol results it would be necessary to multiply by 11 and divide by 20.

Determination of blood-phenol.—This is an intriguing and elusive problem until it is realized that phenols are removed with the precipitate when blood is deproteinized. Even if pure free phenol is added before deproteinization the filtrate will still be found free of phenol. Becher, Litzner and Täglich give the following method: Take not less than 100 c.c. of blood in a 5-litre flask on the top of which are two bulbs of 3 litres each to intercept foam; add about 20 grm. of sodium bicarbonate and about 2 litres of distilled water; distil over 1,500 c.c., which will contain the free phenol, if any. Now add to the remainder concentrated phosphoric acid to neutrality and then sufficient phosphoric acid to make 5%, and hydrolyse. After adding more water distil over a further 1,500 c.c., which will contain the conjugated phenol. The two distillates are extracted with ether

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separately, each five times with 100–150 c.c. of ether. The combined extracts from the two distillates are evaporated separately after adding 4 c.c. of water to each, and treated with Millon's solution.

The method allows of distillation from whole blood and concentration of the minute quantities present. Normal blood contains from 0·00005 to 0·0001%, while in granular contracted kidney the percentage may rise to 0·0009.*

Jolles's method for the estimation of indican.—To 10 c.c. of urine add 2 c.c. of 20% lead acetate and filter. To the filtrate add 1 c.c. of 5% alcoholic thymol, shake well and add 10 c.c. of fuming hydrochloric acid containing 0·5% ferric chloride, mix thoroughly, allow to stand two hours, extract with chloroform until the last extract is colourless; remove hydrochloric acid by washing with distilled water. Make up to a definite quantity with chloroform and compare in the colorimeter with a standard solution of indigo in chloroform.

References.—Stewart, J., *Journ. Ment. Sci.*, January, 1929.—Mutch, *Lancet*, 1929, i, p. 1034.—Scheiner, *Biochem. Zeitschr.*, 1929, ccv, p. 245.—Mann and Shipp, *Journ. Ment. Sci.*, July, 1929.—Alvarez, *Physiol. Reviews*, 1924, iv, p. 352. —Shera, *Journ. Ment. Sci.*, January, 1930.

* One of the most effective arguments against the importance of intestinal toxæmia is the experiment of Donaldson quoted by Alvarez, 1924, in which five men voluntarily induced a condition of constipation lasting ninety hours. The symptoms were so promptly removed by enema that Donaldson argues that they could not have been due to intoxication, but must have been caused by nervous reflexes from the distended rectum. When, however, we consider how minute are the traces of phenol in circulating blood we realize that this substance must be excreted with great rapidity. The argument of Donaldson therefore falls to the ground. The symptoms which he observed were foul breath, coated tongue, impaired appetite, mental sluggishness, loss of attention, depression, restlessness, irritability, poor sleep, headache, increase of reaction time, and increase of blood-sugar—in fact the early symptoms of an acute psychosis.

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THE SERUM CHOLESTEROL IN MENTAL DISORDERS.

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In view of the fact that cholesterol is one of the principal constituents of nervous tissue and presumably plays an important part in the functioning of that tissue, it is surprising that comparatively little attention has been given to the study of the variations of the blood cholesterol in disorders of the brain and mind. Such researches as have been published do not appear to have been based, as a rule, on any extensive number of cases, and there is rarely any attempt to analyse the results according to the actual mental state of the patient, apart from the diagnosis. It is therefore not remarkable that the conclusions of different observers have been somewhat contradictory.

Cruickshank and Tisdall (1) published their estimations of the serum cholesterol of forty psychotic patients, but the method of extraction then used is now known to be unreliable. Targowla, Badonnel and Berman (2) recorded the cholesterol content of sixty sera taken from various cases of mental disorder. They found it to be above the normal in general paralysis, chronic alcoholism and agitated melancholia, variable, but usually raised, in epilepsy and confused states, and low or below normal in mental deficiency. It was also diminished in epilepsy with marked confusion. They suggested an association between hypercholesterinæmia and vagotonia, and between hypocholesterinæmia and sympatheticotonia. Parhon, C. J., and Parhon, M. (3), found the serum cholesterol to be increased in chronic alcoholism and senile states, variable in general paralysis; variable in dementia præcox, but lowered in the chronic forms, and diminished in melancholia and also in a young imbecile. They emphasized the possibility that the serum cholesterol might be influenced by the endocrine glands. Tinel, Dupouy and Schiff (4) considered hypercholesterinæmia to be practically constant in senile conditions. Ducceschi (5) found an increase in blood cholesterol in a series of chronic alcoholics, and showed that this also occurred in dogs poisoned by alcohol. Jacobi (6) agreed with de Crinis (7) that in epilepsy the blood cholesterol is raised, and that the occurrence of a fit is associated with a further increase. Robinson, Brain and Kay (8) found that it was diminished in epileptics,

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especially within twenty-four hours of a fit, and that there was a fall in the cholesterol content of the blood during the pre-convulsive period. Goodall (9) was unable to find any marked difference between the pre-paroxysmal blood and that taken between the paroxysms. Gibbs (10) estimated the blood cholesterol in 38 cases of dementia præcox and found the figure to be low, especially when associated with a recent acute mental state. Forsyth (11) also considered it to be lower in dementia præcox than in other psychotic cases.

Stenberg (12) has recently published a review of the literature on this subject, together with the results of his own investigations on 76 female and 15 male psychotic patients. He found the blood cholesterol to be above the normal in 14 manic-depressive cases with a decrease to a normal value during a remission. In dementia præcox the value was also raised, but normal during remissions. Emotionally dulled cases had a low blood cholesterol, and in emotionally heightened cases it was raised. Only 13 cases, however, appear to have been investigated when improved as well as during the acute state.

My own investigations have been carried out during the last three years at Severalls Mental Hospital, and I am indebted to Dr. R. C. Turnbull for permission to publish the results. They are the records of male patients only, thus eliminating the fallacies introduced by the variation which occurs in blood cholesterol before, during and after menstruation. Serum was used, as the cholesterol present in blood-cells is not susceptible to metabolic variations, and the use of an anti-coagulant for the purpose of procuring plasma introduces the risk of hæmolysis. The blood was taken 2½ to 3 hours after breakfast. The estimation was carried out by drying 1 c.c. of serum in plaster-of-paris, which was then powdered, transferred to a thimble, and percolated by chloroform in an all-glass fat extractor. In all cases duplicate estimations were made, one sample being extracted for at least two hours, the other for an hour longer. The chloroform percolated the plaster at the rate of about 750 c.c. per hour, and control experiments showed that 1½ hours' extraction was sufficient. The solution of cholesterol in chloroform was transferred to a graduated test-tube, made up to 15 c.c. in volume, and estimated by the Liebermann reaction. In order to bring the unknown near to the strength of the standard, a preliminary estimation was carried out on 5 c.c. and the remaining 10 c.c. diluted as indicated. With the usual precautions taken to ensure dry reagents and the balancing of the colorimeter each time

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it was used, this method gives sufficiently accurate comparative results. No estimation was accepted in which the two results differed from their average by more than 2½%.

A series of estimations on 26 normal men gave figures varying from 145 to 199, with an average of 172. The limits of normal serum cholesterol are therefore taken as 140 and 200 mgrm. per 100 c.c. The ages of these subjects varied between 18 and 55.

Dementia Præcox.

89 cases of dementia præcox were examined. Quite early in the investigation it was observed that patients in states of confusion, excitement, agitation or depression tended to have a lower serum cholesterol content than those who were quiet or apathetic. Efforts were therefore made to carry out repeated tests on patients whose mental states showed these variations, whatever the diagnosis. The following are the main conclusions:

1. Dementia præcox patients in a dull or quiet mental state have a high serum cholesterol value. It was found to average 214 in 76 cases, and to be above the limit of normal in 47 of these.

2. In states of confusion or excessive emotion the figure is much lower—average 179 in 38 cases.

3. Of 25 patients in whom repeated estimations in varying mental states could be made, the serum cholesterol was found in 21 cases to be lower when the patient was confused, excited or agitated, than when he was quiet or apathetic; in the remaining four it was raised. The average figures for all 25 were 224 and 185, an average fall in cholesterol value of 17% accompanying the acute phase.

4. The duration of the disorder and the age of the patient (up to 54 years) have little or no influence on the serum cholesterol.

Two cases of dementia præcox may be quoted in detail:

1. Dementia præcox with recurrent confusional state:

3.1.28.	Mental state clear	Cholesterol	260
24.1.28.	Very confused	,,	145
6.2.28.	Clear	,,	245
28 2.28.	Recovering from confusion	,,	271
6.3.28.	Clear	,,	264
20.3.28.	Confused	,,	199
2.4.28.	Clear	,,	255
17.4.28.	Confused	,,	190
19.4.28.	Improving	,,	201
30.4.28.	Clear	,,	217
5.5.28.	Becoming confused	,,	172
14.5.28.	Confused	,,	173
22.5.28.	Clear	,,	256
10.7.28.	Slightly confused	,,	193

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2. Dementia præcox with recurrent state of excitement:

29.11.27.	Excitement . . .	Cholesterol 200
9.1.28.	Just recovered . . .	,, 215
24.1.28.	Clear	,, 230
6.2.28.	Excitement . . .	,, 135
28.2.28.	Clear	,, 240
22.5.28.	,, ...	,, 237

Mood Psychoses.

The cases of mood psychosis—manic-depressive insanity and involutional melancholia, excluding senile manic and depressive states—numbered 50 in all. It was found from the results in these cases that—

1. The average serum cholesterol content during the acute phase of mood psychoses was higher than the normal; the figures are 199 in 32 cases of manic-depressive insanity, 216 in 18 cases of involutional melancholia, and 205 in the whole group of 50 cases.

2. Of the 20 patients tested during a remission or on recovery, as well as during the acute phase, a rise in serum cholesterol accompanied improvement in 17 cases, a fall occurred in 1 case, and in 2 the change was insignificant. The average figures were 206 and 247 for the acute phase and improved period respectively in the series of 20 cases, 207 and 229 in the 6 involution cases, and 206 and 255 in the 14 manic-depressives. Counting one patient tested only during a remission—cholesterol 326—and not included in this group, 18 out of 21 cases were found to be above the normal limit when improved or recovered.

3. There was no constant relationship between the age of the patient and the cholesterol value during a remission or in the acute phase.

General Paralysis.

39 cases of general paralysis were examined. The figure was within normal limits in 9 cases, low in 1, and above the normal in 29. The average was 222. In only 12 cases was the estimation made both in the acute stage and during a remission after treatment; it was found that the cholesterol increased with improvement in 5 cases and was diminished in 7. This series is too small to allow any attempt to associate the cholesterol variation with the different mental abnormalities observed in general paralysis, and with the results of treatment.

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Organic Mental Disorder.

All cases of mental disorder associated with gross organic disease other than general paralysis are included in this series. The average for the 30 cases was 230. The figure was above the normal limit in 23 cases. Cerebral syphilis and organic nervous disease consequent on arterio-sclerosis are the two principal groups in this series; in the former the average figure was 256, in the latter it was 231. In one case which recovered, after prolonged arsenical treatment, from a condition of stupor associated with cerebral syphilis, the cholesterol was observed to fall from 329 to 198.

Alcoholic Psychoses.

The average figure for the 22 cases in this group was found to be 211; in the acute emotional states it was 195, and in the cases without marked emotional changes it was 225. In only 2 cases could the test be made on recovery as well as in the acute phase; in one the cholesterol value rose from 193 to 225 on recovery from a state of agitated melancholia, and in the other from 179 to 233 on recovery from a manic condition.

Imbecility.

The results in 35 imbeciles give an average figure of 178. In only 9 patients was the cholesterol value above 200, and these were nearly all very dull or else over 55 years old. In one case there was a rise from 153 to 180 on recovery from a state of excitement.

Senility.

The average in 15 cases of senile mental disorder was found to be 228. In 9 cases the figure was abnormally high.

Epilepsy.

Epileptics in a mental hospital show two important variations in mental state; they are the fit, with its loss of consciousness, and confusion, or clouding of consciousness, which may be permanent, or occasional and independent of fits, or associated with seizures. Serum cholesterol estimations were made in 20 cases of imbecility with epilepsy, and 32 cases of insanity with epilepsy. The average for the former class was 204, for the latter 217, and for the 52 cases, 212. These estimations were made

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during the patient's usual mental condition, which is distinguished as clear or confused. They show an average of 209 for the 17 cases of confusion and 213 for the 35 cases in which consciousness was clear. Imbeciles differ from other epileptics only in having a slightly lower average. 14 cases were investigated in a state of temporary confusion not associated with fits, for comparison with the figure obtained in the usual mental state. The averages were 223 for a clear mental state and 182 for the confused. In 2 cases the serum cholesterol was increased when the patient was confused; in the other 12 it was lowered, the average fall being 51, and the extremes of the fall 7 and 132. 21 cases were tested on 38 occasions within twenty-four hours of a fit; on 24 the cholesterol was diminished in association with the fit, on 12 it was increased, and on two the change was insignificant. The figures offer no definite evidence to associate the cholesterol variation with the fit or with the pre-paroxysmal phase, owing to the difficulty of arranging for the blood test to be made shortly before a seizure. On only one occasion was this possible; in this case the serum cholesterol was 217 twenty-five minutes before a fit, 152 ninety minutes after the attack, when there was no confusion, and 161 on the following day when confused, 4½ hours after another fit. The next day, when the mental state had cleared, it was 250, and on the following day it was 192. The inter-paroxysmal figure was 213.

It is of interest to ascertain whether any variation occurs in association with epileptiform seizures in cases other than those of so-called idiopathic epilepsy. Two such cases have been under observation.

1. A case of fits and intermittent confusion caused by cerebral cysts:

1.1.29.	Mental state clear . .	Cholesterol	232
4.2.29.	Confused	,,	228
5.2.29.	More confused . . .	,,	236
7.2.29.	Clear	,,	236
22.2.29.	Very confused, 40 min. after fit	,,	228
28.2.29.	Confused for last six days .	,,	197
5.3.29.	Still confused, but less so .	,,	198
9.10.29.	After numerous seizures .	,,	248

2. A case of epidemic encephalitis:

26.3.29.	In a hypomanic state . .	Cholesterol	219
12.12.29.	In *status epilepticus* . .	,,	290

Conclusions cannot be drawn from the second case, on account of the long interval between the two tests, but the first showed that neither confusion nor a fit affected the cholesterol content, except that after prolonged confusion it was lowered.

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These records are completed by the inclusion of two cases of delusional insanity of unknown cause, the serum cholesterol being 164 and 174, and of one case of obsessional state, cholesterol 188.

Summary and Conclusions.

This investigation was carried out on 336 cases of mental disorder of various types. It shows that in the dull, quiet group of dementia præcox cases the serum cholesterol is high, surpassing the normal limit in the majority of cases. It is also raised in most cases of manic-depressive insanity and involution melancholia, and still more so in these cases during a remission. In general paralysis it is variable, but much more frequently above than below the normal, and there is no constant change as the result of treatment. It is high in the majority of cases of psychosis associated with gross organic disease, in alcoholic mental disorders, and in most cases of senile psychosis. It is usually within normal limits in imbeciles, except when complicated by epilepsy. An increase is also found in "insanity with epilepsy." It appears that a high serum cholesterol value is to be expected in all types of mental disease, but not in imbecility.

The variations which occur with changes in the mental state are equally definite. Patients in a confused condition, or with excessive emotional reaction, have a lower serum cholesterol content than others in the same psychiatric group, unless the confusion is of very long duration, as in those epileptics who are always confused, when there is little difference. This diminished cholesterol is observed in the confusion or mood changes of dementia præcox, manic-depressive insanity, involutional melancholia and alcoholic psychoses, in the occasional confusion of epileptics, and frequently in association with the epileptic fit. By repeated tests on the same patient in varying states the fall in cholesterol associated with the acute condition was demonstrated in 52 out of 61 cases of dementia præcox, mood disorder, alcoholic psychosis and epilepsy (exclusive of the fit). It was also found in one imbecile thus investigated. It is not dependent on a high initial cholesterol value, since similar fluctuations occur when the cholesterol during the remission is within the normal limits. It is probable that such variations occur in all types of mental disorder, and it appears likely that a fall in blood cholesterol accompanies emotional reaction in the healthy individual.

So slight is our knowledge of cholesterol metabolism that it is

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impossible to do more than speculate on the cause of the increased blood cholesterol in mental diseases. The fall observed in acute mental states, and here suggested to be a normal accompaniment of emotion, indicates that the blood cholesterol is influenced by the central nervous system, probably by way of the sympathetic and endocrine gland systems. The nature of this influence and its biological value offer a wide field for research in cholesterol variations, not only in the insanities, but in the neuroses and in sound mental health. Further investigations are being carried out, and will be made the subject of a future communication.

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SOME LABORATORY FINDINGS IN THE ROUTINE INVESTIGATION OF ACUTE ADMISSIONS.*

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THE following is an outline of laboratory investigations which have been performed at the Warwick County Mental Hospital during the past two years, together with a summary of results and brief deductions as to the value of each investigation considered from the points of view of diagnosis, prognosis and lines of treatment.

Focal Sepsis.

(1) *Dental sepsis.*—Of 136 cases examined, 77 (56%) showed the presence of pathogenic organisms in tooth root cultures, the predominating organism being *Micrococcus catarrhalis* in 27 cases, *Streptococcus salivarius* in 34 cases, and a mixed infection of *Micrococcus catarrhalis* and *Streptococcus salivarius* in 13 cases. After completion of the requisite extractions in the 77 cases autogenous vaccines were given in 55 of the cases. This group included all those with severe dental infection, the 22 who received no vaccine suffering mostly from a milder degree of sepsis.

Of these severe cases receiving a vaccine 74·5% improved, whereas only 50% of the cases not receiving a vaccine showed improvement, despite the fact that their original infection was slight.

The value of autogenous dental vaccines therefore appears to be very definite.

(2) *Investigation of gastric function.*—From 149 fractional test-meals, normal curves were obtained in 75 cases; 42 cases were found to have subacid gastric secretions, 31 of them showing complete achlorhydria, and 11 hypochlorhydria—that is, a free acidity of less than 10% N/10 HCl. The remaining 32 cases showed excess acid secretion, that is, over 50% N/10 HCl during some part of the test-meal curve.

Regardless of the type of curve, it was found that 92 of the cases (that is 61·7%) had no free acid in their fasting juice; the importance of this will be discussed later.

The number of cases showing secretory abnormalities is to be noted. The greatest divergence from the normal is found in the deficient acid-secreting group: 28% fall into the achlorhydric or hypochlorhydric series instead of the normal 5%.

The over-secreting group also comprises nearly three times as many as the accepted normal number.

The group of cases chosen for this series of investigations comprised primary dements, agitated melancholics, melancholics, maniacs and toxic confusional

* A paper read at the Autumn Meeting of the Northern and Midland Division, Warwick County Mental Hospital, Hatton, October 24, 1929.

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cases in approximately equal proportions. No relation between the type of test-meal curve and the type of mental disorder could be discovered. Both the normal curves and the abnormalities were evenly distributed throughout the different mental groups. In regard to treatment, 40 of the patients showing abnormal gastric secretion have completed a course of acids or antacids, as required, given three times a day with the principal meals over a period of 3–12 months, varying with the progress of the case.

By acid administration 11 out of 24 subacid curves have been brought back to normal limits. Presumably the mucosa has been restored to a more healthy condition and has been able to resume its secretory functions. The mental and physical benefit accompanying the acid administration have also been very marked.

The administration of antacids in the form of alkalies, belladonna and hyoscine hydrobromide also shows good results, 11 out of 16 hyperchlorhydric curves being brought down to normal levels, 8 showing mental improvement, and all but 1 case showing physical improvement.

The immediate dangers of an over-secreting stomach appear to be less than those of an undersecreting one, but over-secretion is probably to be regarded as the expression of an early irritation stage, which will eventually lead to an atrophy of the mucous membrane and an accompanying subacidity; for this reason it appears advisable to bring the hyperchlorhydric curve back to normal limits by treatment if possible.

Sterile fasting juice cultures were made on 83 cases. The method adopted was to make a first-day or immediate culture soon after procuring the juice, and if this proved positive, to allow the juice to stand at room temperature for 24 hours and then culture it again.

Fifty-one of these cases showed no free HCl in the fasting juice. Of these, 23 cases who had no oral sepsis showed satisfactorily sterile gastric juice cultures, 20 being sterile on immediate culture, and the remaining 3 showing pathogenic organisms on the first day only. But of the 28 in whom oral sepsis accompanied the lack of free resting HCl, only 3 were sterile on immediate culture, and 18 showed the presence of pathogenic organisms in the second-day culture.

Of the 32 cases with free resting HCl, 30 were sterile on immediate culture, although 17 of these were suffering from oral sepsis; an additional case was sterile on second-day culture, leaving only one case out of the 32 showing defective germicidal powers in a gastric juice containing free acid.

These figures show the danger of a subacid gastric juice. Insufficient free acid remains in the stomach after meals to act as a bactericidal barrier against the invasion of the gastric mucosa by pathogenic organisms from the mouth. Statistics as to the efficacy of acid administration in eliminating pathogenic organisms from the gastric juice are not yet available, as the investigation into sterile fasting juice cultures was only begun recently, and treatment experiments are still incomplete.

(3) *Bacterial examination of catheter urines.*—Cultures of catheter specimens of urine were made in 200 cases, and the presence of a heavy *B. coli* infection was found in 73 cases (36·5%).

The white blood-counts of these cases showed normal figures in 38 cases, a leucocytosis in 19 cases, a leucopenia in 16 cases.

The high number of abnormal readings point to the widespread systemic disturbance of the body.

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Fifteen of the 73 cases died within a short period of their admission; 38 of the remainder have completed a course of 6 intravenous autogenous vaccines followed by a course of one month pot. citrate, and finally one month hexamine and sodium acid phosphate.

Re-examination of the infected urines after completion of the course of treatment showed that 25 of the 38 urines had been rendered sterile—14 of 25 had improved mentally and 19 physically. Of the 13 in whom the bacilluria persisted, only 3 improved mentally and 7 physically.

Of the "sterile urine" cases, all the white blood-counts except 2 returned to normal after treatment. Of the persistent bacillurias, 3 cases which had shown leucocytosis returned to normal after treatment, but all the cases which had shown leucopenia continued to do so, showing the general inability of the body to respond to treatment.

The deductions from these findings are:

Firstly, the high percentage of deaths in this group, namely 20%, indicates that the presence of a severe *B. coli* infection of the urine, together with a debilitated condition of the patient, are of grave prognostic import.

Secondly, the poor mental and physical results attached to the group of cases resistant to treatment shows that chronic focal sepsis results in the complete inability of the body to respond to curative stimuli in any form.

Thirdly, in contrast to these extreme groups are the cases coming under treatment before recuperative powers had become exhausted. These were able to respond to the stimulus of the vaccine, and, with the assistance of the antiseptics, to overcome the urinary infection. The general physical condition was improved in 76% of the cases, and the mental condition in 56%. It appears, then, that as a means of treatment, and incidentally as a guide to prognosis, a vigorous attempt to eliminate urinary infection is fully justified.

(4) *Gynæcological examinations.*—Cervical swabs were taken in 70 cases, and cultures made from them were sterile in 47 cases, while 21 showed the presence of a *B. coli* infection.

The relation of pathogenic organisms in the cervical canal to the presence of similar organisms in the urine was found to be that a bacilluria accompanied a sterile cervical swab in 12 cases out of the 47—that is, 25·5%—but of the 21 cases suffering from cervical infection 15 were accompanied by a bacilluria—that is, 71·5%.

Of the 21 cases of *B. coli communis* cervicitis, 5 died shortly after admission; the remaining 16 were given a course of 6 autogenous intravenous vaccines. Cervical swab and catheter urine cultures made 3 to 6 months after the completion of the course showed that the cervical canal had been rendered sterile in 12 cases, but that a heavy growth of *B. coli communis* persisted in 4. A sterile urine was found to accompany a sterile cervix in 11 of the 12 cases, whereas bacilluria persisted in 3 of the 4 cases showing persistent cervicitis. Mental and physical improvement also occurred in a much higher proportion of the cases where cervical cultures were rendered sterile than in those in whom the cervical infection persisted.

This group shows the tendency in debilitated conditions for bacteria to invade more than one system of the body. If the

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B. coli infection is blood- and lymph-borne, as is most probable, this double invasion may be explained as following a primary lesion in the bowel. The irritation and congestion of chronic constipation result in capillary stasis and in the production of minute traumatic areas in the mucosa, which bacteria use as a portal of entry. Embolic spread ensues, and the organisms finally reach the genito-urinary tracts. Debilitating and congestive factors then again assist the multiplication of organisms in these areas. The fact that after treatment improvement tends to occur in both systems or in neither seems to show that vaccines are more likely to be beneficial than local treatment, as they act by raising the general resistance. The cases failing to respond have presumably an insufficiency of defence reserve left; the bacilli continue to flourish in the invaded areas and the mental and physical response to treatment is *nil*.

The Blood.

(1) *White blood-counts.*—From 133 white blood-counts normal readings were obtained in 70 cases, a leucocytosis was found in 34, and a leucopenia in 29.

The cases of leucocytosis represent acute infections: 9 of them died shortly after admission; the remainder returned to normal with the subsidence of the infection.

It is the cases of leucopenia that are of special interest: 23 of these—that is, 79%—showed chronic focal sepsis in some system of the body, the proportions being: dental sepsis in 14 cases, cystitis in 2, cervicitis in 2, cystitis and cervicitis in 3, and a triple infection of cystitis, cervicitis and dental sepsis in 2 cases.

This points to prolonged invasion of the body by pathogenic organisms and their toxins as responsible for a marked exhaustion of the defence mechanisms, notably the white cells of the body.

The lines of treatment adopted were the removal of focal sepsis, followed in some cases by intravenous protein shock. The general response to treatment was that 21 of the 29 leucopenias were brought back to normal, but a low white count persisted in the remaining 8 cases.

The effects of protein shock were that the white blood-count returned to normal in 12 of the 16 cases who received it, and of the 16, 9 improved mentally and 14 physically. This is to be contrasted with the group of 13 who received treatment for focal sepsis, but no protein shock: the white blood-count and the general physical improvements are satisfactory, but the mental results are very poor, only 3 showing any improvement.

The deduction is that while the removal of focal sepsis, together with verandah treatment and good food, is sufficient to bring the white count back to normal and to cause physical improvement, the addition of protein shock is required to dislodge the toxins from the more sensitized nervous tissues.

(2) *Red blood-counts.*—Of 144 cases examined, 44 showed a marked anæmia on admission, *i.e.*, approximately one-third.

The relation of the anæmia to types of mental disorder and to focal sepsis was found to be that of 47 primary dements, 16 showed anæmia, and of these 10

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suffered from sepsis in some system of the body. In the other groups, with one exception, all the cases with anæmia showed focal sepsis also—that is, all 6 of the manic-depressive group, 10 out of 11 melancholics, and all 11 of the toxic insanity group.

The lines of treatment adopted were, after removal of focal sepsis, rest, fresh air, full diet, oral and hypodermic iron and arsenic, liver and bone-marrow, ultra-violet light, and special courses of remedial exercises. Six of the cases died within a short period of admission. Of the remaining 38, approximately half of each group were brought back to normal red blood-count levels. These cases cured of their anæmia were all in acute phases of mental disease. The cases "mentally improved" also showed recovered red blood-counts, with the exception of 2, in whom the anæmia persisted up to the time of their discharge.

Prognosis is therefore good when the mental condition and the red blood-count picture improve simultaneously. Prognosis is bad if, firstly, the mental improvement does not coincide with the overcoming of the anæmia, or secondly, if the anæmia in chronic types of cases does not yield to treatment. It is probable in the first case that the nervous structures have suffered permanent damage through malnutrition and under-oxidation during the prolonged period of anæmia, and in the second case that there is present in the body an undiscovered toxin sufficiently potent to reduce the number of red cells, and also directly to destroy nervous tissues apart from being responsible for their malnutrition.

Thorough eradication of all known sources of toxæmia and persistent attempts to overcome anæmia should therefore be made as early as possible so that permanent damage may be avoided.

(3) *Agglutinating powers of the blood.*—114 cases were treated with intravenous protein shock, the preparations used being autogenous *B. coli communis* vaccines in 33 cases, and T.A.B. in 81 cases. The method adopted was to give one injection a week for six weeks, increasing the dosage each time and obtaining an average pyrexia of 101°–104° F., which returned to normal in 36 hours.

The dosage for T.A.B. was commenced at 10 millions and increased to a maximum of 500 millions; *B. coli communis* vaccines were started at 75 millions and increased to a maximum of 2,500 millions.

The general relation of the subsequent agglutinating power of the blood to mental improvement was that the agglutinating power was raised in 54 out of 114 cases and failed to be raised in the remaining 60. Of the 33 cases treated with autogenous vaccines, 10 showed increased agglutinating powers, and 8 of the 10 —that is, 80%—showed mental improvement, whereas of the 23 who failed to show raised agglutinating powers, only 12 improved mentally—that is, 52%.

Mental improvement therefore occurred in a higher proportion of *B. coli communis* cases showing raised agglutinating powers than in those failing to increase their agglutinating capacity, and thus, for this group, the presence of a raised agglutinating power improved the prognosis. Of the 81 cases treated with T.A.B., mental improvement occurred in an almost equal proportion whether the agglutinating power of the blood was raised or not, namely 57% in the "raised" group and 54% in the "not raised" group. Agglutinating capacity in this group was therefore of no prognostic value.

Physical improvement was the rule, irrespective of mental or of agglutinating results.

The different types of mental disorder were all found to respond to intravenous protein shock in a similar manner, *i.e.*, approximately the same percentage in each group of disorder was capable both of increasing the agglutinating powers of the blood, and of improving mentally irrespective of the agglutinating powers.

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The high percentage of mental improvement resulting from this form of treatment, namely, 65 out of 114 cases, or 57%, seems to make it probable that protein shock has beneficial effects other than those indicated by the raised agglutinating powers, and to justify the adoption of this hypothesis as a basis for further investigation.

The probability is further increased by the observation of individual cases. The actual statistics of percentage improvements have been considerably lowered by the inclusion of a group of rather long-standing primary dements, who were treated with a view to testing the effects of T.A.B. shock upon advanced primary dementia, but gave results that were quite negative in regard to mental change, the disease being too far developed. But a considerable number of primary dements in earlier acute phases gave most dramatic results in no way dependent on a subsequent increased agglutinating power of the blood. Many of these cases emerged from a state of stupor, faulty habits and poor physical condition into a state of renewed interest in their surroundings and a general convalescent level of both mental and physical health.

The Urine.

(1) *Chemical urine tests.*—244 morning specimens of urine were examined for the presence of sugar and acetone: 96 of the cases were found to be normal, 53 showed the presence of sugar and acetone, 74 showed excess of sugar only, and 16 showed acetone only.

The high percentage of cases having sugar and acetone shows the frequency of considerable metabolic disturbance in acute admissions. The condition is doubtless due to neglect and starvation for some days before admission. As the acidosis is almost without exception accompanied by marked restlessness and confusion, it is well to detect it early and to overcome it by free administration of alkalies and glucose. In many cases rest and quiet may be produced by this means rather than by the use of sedative drugs in themselves toxic.

(2) *pH of urine.*—This group of investigations was suggested by the work on urinary reactions published by Capt. Mann (*Journal of Mental Science*, July, 1928). It is known that in health the renal and respiratory mechanisms work concurrently to keep the reactions of the blood and tissues constant. Therefore during sleep, when the respiratory system is depressed, the kidneys counteract the increasing acid pressure in the body by excreting a more highly acid urine. Similarly, with the increased respiratory activity of the daytime, more acid is got rid of by the lungs and the urine becomes correspondingly more alkaline. But Capt. Mann has shown that in some cases of mental disorder there is no correspondence between urinary pH and alveolar air CO_2 tension. The morning alkaline tide is either reversed to an acid one or a flat series of reactions on an acid level is found,

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and examination of the alveolar air shows absence of a correspondingly low CO_2 level. This indicates a disturbance of the acid-base equilibrium of the organism, associated with a depression of the respiratory mechanism. Therefore the determination of the pH of 2-hourly specimens of urine from early morning until noon in fasting patients gives a good indication of the efficiency of the respiratory mechanism.

For this series of experiments the B.D.H. capillator method was used; it is simple, quick and satisfactory, and consists only in mixing equal volumes of urine and the given indicator and comparing the colour produced with the standards provided.

Examination of urine specimens of 117 fasting patients, passed 2-hourly from 6 a.m. to 2 p.m., for evidence of the normal daily alkaline tide gave the following findings:

Of 38 primary dements, 8—that is, 21%—gave evidence of an abnormal tide, 4 showing a reversal of the normal to acid, and 4 showing no pH variations in any of the specimens.

Of 17 maniacs 2 only were abnormal; of 26 agitated melancholics 11 were abnormal, *i.e.*, 42%; of 24 simple melancholics 19 were abnormal, *i.e.*, 79%. Among the toxic insanities one only was abnormal.

Note the high percentage of abnormality in the melancholic groups, the acid and flat tides comprising 60% of the agitated and simple melancholic types.

The line of treatment adopted for patients found to be abnormal in this series was massage and remedial exercises, especially deep breathing. The patients, while still in bed, were commenced on individual schemes of massage, passive movements and simple active movements; as soon as possible they were drafted into daily exercise classes in bed on the admission verandahs; after some weeks or months they were allowed up and sent into various grades of gymnastic and folk-dancing classes.

The results of treatment on the 41 abnormal cases were that of the 17 cases showing acid tides 14 were brought to normal, and of these 14, 12 improved; 3 cases changed from acid to flat tides and of these only 1 improved. Of the 24 originally showing flat tides, 14 were brought to normal and 13 of these improved, whereas of the 10 cases who showed persistent flat tides, 9 showed no mental improvement whatever.

These findings therefore seem to indicate one of the uses of the Remedial Exercises Department. The respiratory exchanges are improved by the exercises, and the benefit to the acid-base equilibrium of the body is shown by the restoration of the renal pH mechanism to normal. The great accompanying mental improvement is also seen from the figures, the only group showing a high proportion of failure to improve mentally being the group whose pH tests also failed to return to the normal.

The Liver.

(1) *The hæmoclastic crisis.*—Of 115 cases on which this reaction was performed, positive results were obtained in 58 and negative in 57. The relation of the crisis to prognosis is shown by the fact that mental improvement occurred in a considerably higher proportion of negative than positive cases, namely in 27 (47%) of negatives, with 13 discharges, as opposed to 13 (22%) of positives, all of whom were discharged. The type of case comprising the 13 positive discharges is of interest: only 5 of the group were primary dements, and 3 of these were discharged unrecovered under Section 79; of the remainder, 4 were melancholics, and 4 manic-depressives in a remitting phase.

The relation of response to the type of mental disorder was as follows: Primary dements 74%, manic depressives 47%, agitated melancholics 63%, simple melancholics 31%, toxic insanities 11%. This shows the usual predominance

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of primary dements giving positive results, though the actual proportion of positives is not quite so high as that found by Dr. Robertson, who, in her series of hæmoclastic crises published from the Maudsley, gave 94% of primary dementias positive, 75% manias, 85% melancholias. In view of the uncertainty of the exact causation of the crisis, it has been considered in relation to the presence of focal sepsis in the body, and also in relation to the capacity of the blood to increase its agglutinating power in response to protein shock. Focal sepsis was found present in 32 of the 58 positive cases and 36 of the 57 negative ones. The agglutinating power was found capable of being increased in 7 of 21 positive responses, and in 4 of 19 negative ones.

These results therefore yield only negative information, the connection between the crisis and either focal sepsis or the agglutinating power of the blood being apparently *nil*.

The effects of acids and alkalies on the reaction were tried in 48 tests confined to 12 cases, and reversal of the action from positive to negative was obtained in 24 of the tests, but only 3 cases gave a consistent reversal at each test, the responses in the other cases being variable. The choice of acid or alkali depended on the test-meal findings, *i.e.*, acid was given to cases showing achlorhydria, and alkali to cases showing hyperchlorhydria. The figures in this series are too small for any deduction to be made; they are introduced as suggesting a possible further line of experiment, since any measure which would consistently change a pathological response to a normal one might fairly be assumed to be of value to the patient.

The general inference from this group of hæmoclastic investigations seems to be in accordance with already published data on the reaction—namely, that it is of some value in the diagnosis and prognosis of certain forms of mental disorder, particularly primary dementia.

A positive hæmoclastic crisis is generally accepted as indicating a defective function of the liver, but the actual nature of the defect and a satisfactory approach to its treatment have yet to be found.

(2) *Rogers glycuronic acid test.*—In health certain drugs, such as aspirin, are said to be detoxicated in the liver by combination with glycuronic acid, the ensuing glycuronate being excreted in the urine.

Derangement of hepatic function is said to result in the absence of glycuronates from a 24-hour specimen of urine collected after the administration of 5 gr. of aspirin.

This test for urinary glycuronates following ingestion of aspirin was performed in 133 cases, and in no case was defect of liver function found.

It would appear that the test is not sufficiently sensitive to show any early degree of defective antitoxic powers of the liver.

(3) *Fouchet's test for bile-pigment in the blood.*—It is claimed that this test is able to give a positive result in bile-containing solutions up to a dilution of 1 in 60,000.

The test was performed on the serum of 46 patients, and gave—

Constantly positive results . . .	4 cases.
,, negative ,, . . .	29 ,,
Positive results becoming negative	6 ,,
Negative results becoming positive .	7 ,,

Positive and negative cases gave consistent results when re-examined; 2 positive and 1 negative case were repeated for this purpose 5 times; others were repeated 2–4 times.

Of the constantly positive cases 2 have died, and neither of the other two has so far been improved by any form of treatment.

The 6 positive cases becoming negative showed corresponding physical and

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mental improvement in 4 cases; it is also of interest to note that of the 2 cases of this group failing to improve mentally, 1 has now reverted to a positive Fouchet.

The negative cases becoming positive showed absence of mental improvement in all cases except 2; they were therefore given a course of protein shock, with the result that 5 of the cases have now been rendered negative again, but as 4 of them still show no mental improvement, it will be of interest to observe whether they remain negative or not.

The relation of the Fouchet reaction to the red blood-count has been considered. Anæmia was found to accompany a positive Fouchet in only 4 out of 17 cases; the excess of bile-pigment in the blood can therefore only be attributed to a hæmolytic origin in comparatively few cases. Approximately 50% of each group of the Fouchet test results showed a positive hæmoclastic crisis; there appears, therefore, to be no relation between the two tests.

The test appears to be a satisfactory indication of the presence of bile-pigments in the blood. It is, of course, less informative than the Van den Bergh test, but it is easily and quickly performed on 3 drops of the patient's serum when blood is being taken for other examinations, and it would seem to have its value in a scheme of investigation in which economy of time is essential owing to the large numbers of cases to be dealt with.

Intestinal Stasis.

(1) *Indicanuria.*—Indican is formed in the liver by the combination of potassium and sulphuric acid with indole, which is derived from the alimentary canal by bacterial action on the amino-acid, tryptophane.

Intestinal stasis results in increased bacterial decomposition, and excess indole is formed, absorbed into the blood, converted into indican, and excreted in the urine.

The morning specimens of 244 newly admitted cases were examined for indicanuria, and gave positive results in 23 cases, *i.e.*, approximately 9½%.

The indicanuria did not persist for more than 14 days after admission in any one case. In 16 cases the condition was also accompanied by the presence of sugar and acetone in the urine, so that the disturbance of metabolism in these cases was widespread. All three abnormal constituents disappeared from the urine at approximately the same time.

All the cases of indicanuria showed restlessness or depression, or both, but owing to the co-existing acidosis in so many of the cases, it is not possible to attribute the restlessness, at any rate, to the excess indican. Indican is not itself markedly toxic, but its presence is an indicator of toxic processes in the alimentary canal, some of the products of which may well assist in the causation of motor restlessness or mental depression.

Approximately 50% only of the positive indican cases showed a positive hæmoclastic crisis. As both reactions have been described as tests for liver functions, this is of interest. The ready disappearance of indican from the urine suggests that its presence denotes a temporary but marked constipation rather than a permanent defect in the digestive cycle.

The performance of the test for indican on admission does appear to be of value as indicating in positive cases the necessity of special measures for clearing the alimentary tract of accumulated toxic material.

(2) *Urinary sulphates.*—A second test for excessive intestinal putrefaction was also made in a series of cases, namely, a quantitative estimation of the inorganic and the ethereal sulphates in 24-hourly specimens of urine.

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These sulphates of the urine are products of exogenous protein metabolism; inorganic sulphates are derived from oxidation of the sulphur of the protein, and ethereal sulphates, as already stated, are derived from tyrosine and tryptophane by bacterial putrefaction. A ratio between the inorganic and ethereal sulphates of less than 10 : 1 is said to indicate excess intestinal putrefaction. The estimations were made on all suitable admissions over a period of a year and repeated twice weekly in a number of cases during this time. In all, 92 patients were examined in this series; the total number of estimations was 500.

No consistent results were, however, obtained: readings from specimens of the same patient varied greatly and without apparent cause from week to week, and similar types of mental disorder gave very dissimilar sulphate ratios; at the end of the year the investigation was closed as yielding no useful information.

Blood-Sugars.

Blood-sugar curves have been done on 117 cases, with the result that 22 only of the curves may be said to fall within the limits of the normal; 81% of this group of mentally disordered patients therefore suffered from abnormal sugar metabolism.

In the abnormal group, an unduly high peak and a delayed return occurred with great frequency, the high peak being present in 56 cases and the delayed return in 85. But neither the high peak nor the delay appears to be confined to any one group of mental disorder, the distribution throughout the various classes being approximately equal.

The curves have also been considered in relation to the test-meal findings, but there appears to be no constant connection between any of these groups.

The low curves seem to be confined to cases melancholic in type, the primary dements in this group being of the dull and depressed type. But the occurrence of the low curve is comparatively uncommon, *i.e.*, 5% of the total series, and the greater number of the melancholics belong to the high delayed types. Examination of fasting levels showed that regardless of the type of curve, 42 of the cases had fasting blood-sugar levels above the normal. The outstanding feature of this group was motor restlessness, often accentuated at the beginning of the experiment.

The line of treatment adopted in the abnormal cases was decided, not by the blood-sugar alone, but by the whole clinical and pathological picture of each case. For example, one case of stupor with achlorhydria and a high delayed curve was given HCl; another case of melancholia with achlorhydria and a low sugar curve was also given HCl; both these patients gave normal sugar curves after treatment for six months, and both improved mentally.

Ten high delayed curves were found to have become normal in peak, though still delayed, and 3 more became entirely normal, after each patient had been given a course of autogenous vaccine for some focal sepsis found in the system; 8 of these cases improved mentally.

Four cases have been brought from a high to a normal peak by insulin—the delay persists in these cases; 2 of them are mentally improved. Another very high curve was brought to normal by a course of parathyroid and calcium lactate over a period of nine months; the patient suffered from marked hyperchlorhydria and had had an operation for duodenal ulcer shortly before admission. He still complained of considerable abdominal pain and his appetite was very poor; both his gastric and his mental symptoms improved concurrently with the return of the sugar curve to normal level.

Another case of stuporose melancholia having a very low flat curve and a systolic blood-pressure of 80 mm. Hg. was given a course of adrenaline (hypodermically) and pituitary (by the mouth). The blood-pressure gradually rose, and now (after three and a half months) stands at 114 mm. Hg. The sugar curve is normal in height, though it still shows delay; the patient is emerging steadily from his

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stupor; he can now carry on a conversation, and joins the rug-making class and the daily physical drill class.

In all, 38 of the abnormal cases were re-examined after treatment, with the result that of the 4 low curves all were found to have returned to normal, but 2 still showed delay; all this group improved.

Of the 11 normal peaks with delay, 4 progressed to a low type, and only 1 of these improved; 4 remained normal but still delayed, 3 of these improved; 3 became high, and 2 of them improved.

Of the 23 high peaks, the 9 becoming normal all improved; of the 9 becoming normal but delayed 3 improved; and only 2 of those remaining high improved.

It is therefore seen that all cases showing blood-sugars returning to normal improved mentally; the curves remaining low showed poor mental results, and of the cases showing persistent delay, approximately half improved.

The blood-sugar estimation in mental disorder appears, then, to be of service when considered in conjunction with the other pathological findings of each individual case; a few definite types of case suggest direct lines of treatment provided other findings do not contra-indicate them, *e.g.*, thyroid and pituitary for low flat curves, calcium and parathyroid for abnormally high curves, insulin for curves tending to diabetic types of delay; but the greater number of patients require treatment for other system defects, *e.g.*, achlorhydria, focal sepsis and so on, and in these cases the blood-sugar is of value, as its approach to normal forms a good index of progress towards recovery.

Blood-sugar curves will probably be found to provide a key to hitherto undiscovered metabolic errors in the system. The readings are so various, and yet so constant for each individual case, that the factors responsible for the grades of abnormality should prove a valuable clue to the chain of physical causes connected with mental disease.

Syphilis of the Nervous System.

A Wassermann test on the blood and cerebro-spinal fluid and Lange's gold curve were performed in 147 cases and the results showed a positive blood and cerebro-spinal fluid in 40 cases, of which the gold curve was paretic in type in 28 cases, and luetic in the remaining 12. The cases with paretic curves were all diagnosed clinically as cases of well-developed general paralysis. The luetic curves included all the cases clinically diagnosed as cerebro-spinal syphilis, and also general paralytics in earlier stages of the infection.

A positive blood and negative cerebro-spinal fluid occurred in 6 cases, and slight gold curve changes were present in 3 cases of this group. This suggests that Lange's test is more sensitive than the Wassermann, and shows earlier changes in the spinal fluid.

The third group comprised 17 cases, showing negative blood and positive cerebro-spinal fluid, and of these the gold curve was paretic in 5 cases and luetic in the remaining 12. The clinical diagnoses of this group were almost equally divided between general paralysis and cerebro-spinal syphilis, and, as in the first group, in the cases of early general paralysis, the typical complete precipitation of the gold curve was replaced by the luetic type of reaction.

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	Blood Wassermann.	Cerebro-spinal fluid Wassermann.	Number.	Gold curve. Paretic.	Luetic.	Negative.	Clinical diagnosis. General paralysis.	Cerebro-spinal syphilis.
Group 1	+	+	40	28	12	0	34	6
,, 2	+	—	6	0	3	3	0	6
,, 3	—	+	17	5	12	0	8	9
,, 4	—	—	91	0	4	87	0	4

RESULTS OF TREATMENT.

Group 1.—40 *Cases*.

	Number.	Blood and cerebro-spinal fluid +.	Blood +, cerebro-spinal fluid —.	Blood —, cerebro-spinal fluid +.	Blood and cerebro-spinal fluid —.	Original gold curves. Paretic. (After treatment.) Paretic.	Luetic.	Luetic. (After treatment.) Improved.	Negative.
Discharged:									
Re-examined	6	3	2	1	0	2	4	1	0
Not re-examined	5	—	—	—	—	—	—	—	—
Improved	8	4	1	1	2	2	4	1	1
Stationary	4	—	—	1	3	—	2	2	1
Died	9	—	—	—	—	—	—	—	—
Still under treatment	8	—	—	—	—	—	—	—	—

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GROUP 2.—6 *Cases.*

	Number.	Blood +, cerebro-spinal fluid −.	Blood and cerebro-spinal fluid −.	Original gold curves. Luetic. (After treatment.) Improved.	Luetic. (After treatment.) Negative.	Negative.
Discharged:						
Not re-examined	1	—	—	—	—	—
Improved	2	1	1	—	1	1
Stationary	3	2	1	1	—	2

GROUP 3.—17 *Cases.*

	Number.	Cerebro-spinal fluid +, blood −.	Blood and cerebro-spinal fluid −.	Original gold curves. Paretic. (After treatment.) Luetic.	Luetic. (After treatment.) Improved.	Luetic. (After treatment.) Negative.
Discharged:						
Re-examined	5	1	4	4	—	1
Not re-examined	2	—	—	—	—	—
Improved	2	1	1	1	—	1
Stationary	1	1	—	—	1	—
Still under treatment	7	—	—	—	—	—

GROUP 4.—4 *Cases.*

	Number.	Luetic curves (after treatment). Improved.	Luetic curves (after treatment). Negative.
Discharged:			
Re-examined	1	—	1
Not re-examined	1	—	—
Improved	2	1	1

Finally gold curve changes occurred in 4 cases of the group showing negative blood and cerebro-spinal fluid Wassermanns; the curves in all cases were luetic, but the precipitation quite definite. All the cases showed clinical evidence of syphilis of the nervous system, and all improved mentally and physically under anti-syphilitic treatment. Examination of their gold curves after treatment showed 3 of them to have become negative.

Re-examination of the 4 groups was made at an average of nine months after completion of the course of treatment, and at a period varying from one-half to four years after the original examination.

Of the first group, namely, those showing positive blood and cerebro-spinal fluid Wassermanns, 11 cases were able to be discharged, 8 improved, 4 remained stationary, and 9 died. In 8 of the cases the cerebro-spinal fluid was found to give a negative Wassermann, the time elapsing between the original and the final examination averaging 2¼ years; the time elapsing between the completion of the last course of treatment and the final examinations averaged 1¼ years. Of these 8 cases, 2 were able to be discharged, 3 improved, and 3 remained stationary. It is interesting that only 2 of the 11 discharges in this group showed a negative cerebro-spinal fluid Wassermann, but the explanation probably lies in the fact that the cases improved very dramatically after their course of treatment, especially after malaria, and were discharged within a short period; examinations therefore

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had to be made soon after completion of treatment, when the improvement of the cerebro-spinal fluid had not had time to declare itself.

The gold curves in these 8 cases showed that 4 curves originally paretic had been changed to luetic types, and of 4 originally luetic, 2 showed less precipitation and 2 became entirely negative.

In the second group, namely the 6 cases showing positive blood and negative cerebro-spinal fluid Wassermanns, 2 of the bloods were rendered negative by treatment, and 4 remained positive but their gold curves improved, and 1 case was discharged.

The relation of the syphilitic infection to the mental disorder in this group is uncertain; none of the cases showed the more common characteristics of syphilis of the nervous system, 2 being agitated melancholiacs, 1 a stuporose melancholic, and 3 aggressive paranoid types. It is possible that the mental symptoms were psychogenic, and not the outcome of organic brain lesions of syphilitic origin.

In Group 3, namely those showing negative blood and positive cerebro-spinal fluid Wassermanns, the cerebro-spinal fluid re-examined after treatment was found to be negative in 5 cases, the time elapsing between the original and final examination averaging fifteen months, and the time between the completion of the last course of treatment and the making of the final examination averaging seven months. Of these 5 rendered negative 4 were able to be discharged. The total number of discharges of this group of 17 was 7. In the 5 cases becoming negative 3 of the gold curves changed from paretic to luetic in type; the other 2, originally luetic, became negative. The patients in this group were young (30 to 40 years), and showed early and acute stages of their disease; treatment was given early and they responded well.

In regard to Group 4, the following is an outline of the 4 cases showing gold curve changes despite a negative blood and cerebro-spinal fluid Wassermann.

One patient had a third nerve palsy and was melancholic; both her organic and functional symptoms cleared simultaneously under treatment. Another suffered from headaches characteristic of cerebro-spinal syphilis; the headaches were alleviated by treatment, but not cured, although the cerebro-spinal fluid is now negative to Wassermann and gold tests; it is probable that areas of chronic fibrosis are responsible for the persistence of the pain. A third patient had recurrent seizures for about three months after admission; they ceased after a course of anti-syphilitic treatment. The patient has become somewhat facile, probably the result of permanent damage resulting from the fits, otherwise he is well and able to be on parole.

The fourth case showed acute confusion; after anti-syphilitic treatment the confusion cleared, and although distinctly dementing the patient was able to be taken home under Section 79.

These 4 cases are described singly owing to the rarity of the occurrence of changes in the gold curve accompanied by a negative Wassermann in both blood and cerebro-spinal fluid.

Varieties of anti-syphilitic treatment employed were: (1) Malaria, (2) tryparsamide, (3) T.A.B., (4) N.A.B., (5) bismuth, (6) intramuscular mercury.

The combinations and successions of the courses were varied with the symptoms and progress of the case, no definite routine being followed.

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A METHOD OF CONTINUOUS COLON IRRIGATION.

By T. C. GRAVES, B.Sc., M.D., F.R.C.S.,
Chief Medical Officer;

AND

A DESCRIPTION OF THE RUBERY HILL TABLE FOR THIS PURPOSE,

BY THE SAME AUTHOR AND

D. E. TURNER, M.I.Struct.E., A.M.I.San.E.,
Manager of Works,
City of Birmingham Mental Hospitals.

MANY requests have been received for information concerning the table, and also as to the method for continuous colon irrigation used at this hospital. In the hope that such information may be of general service the following communication is made:

In 1927 Dr. Henry A. Cotton kindly supplied us with a photograph of the table for this purpose which he had installed at the New Jersey State Hospital at Trenton.

As such an apparatus could not be purchased in this country we decided to construct in the hospital workshops a table embodying our own ideas; improvements have since been effected, and the one to be described may be taken as a standard for some years. The principal difference between this and the Trenton table is that the former has two ordinary taps instead of one three-way tap. Each arrangement has advantages.

CONSTRUCTION OF THE TABLE.

The accompanying illustrations show the simplicity of the design of the table, which can be made by the hospital engineer or plumber. The first made here was, excepting the zinc top, constructed of material from the scrap heap, condemned steam tubing, etc. A stand of galvanized wrought iron steam tubing, with teak wood feet, carries a frame of angle iron covered with a sheet-zinc top (Figs. 2, 3 and 4).

The zinc top slopes slightly from the ends and sides to a flanged aperture situated in the right half of the table (Fig. 1). Under this aperture can be fitted a water-closet pan or a removable sanitary receptable.

Attached to the right back leg of the table (Fig. 2) is a slot through which passes the vertical rod carrying the supports for the containers.

The height of the containers is fixed by a milled edge wheel and screw made by Messrs. Charles Winn & Co., of Granville Street, Birmingham, in gun metal, 3s.,

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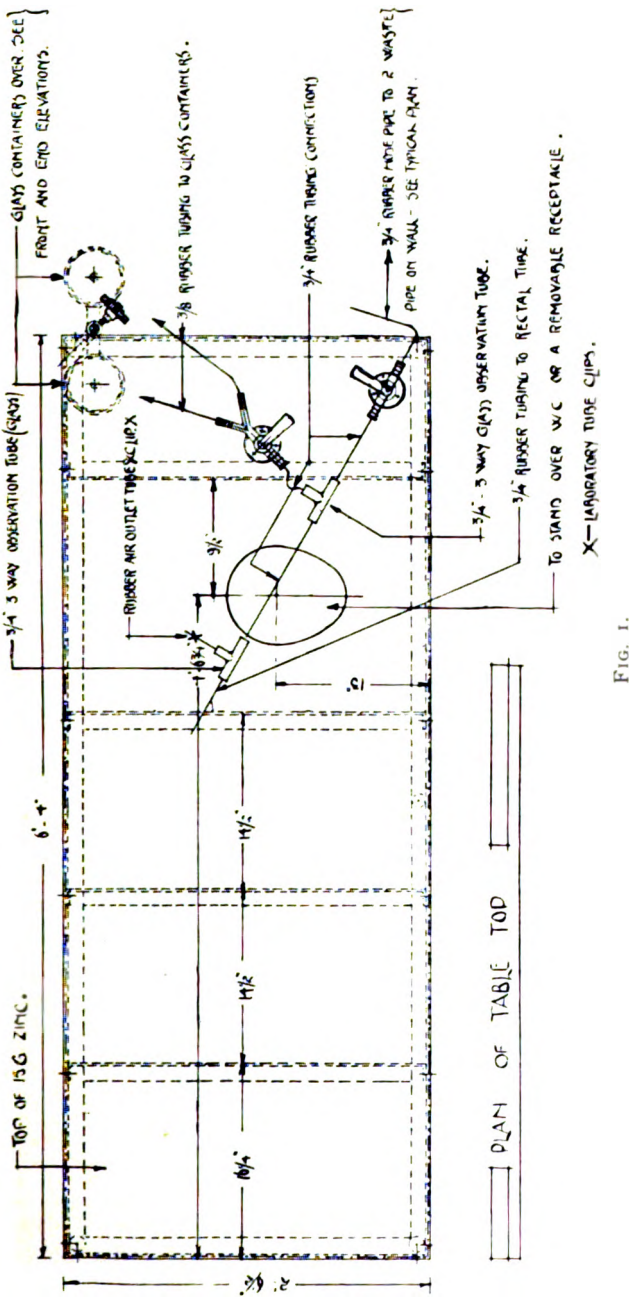
GLASS CONTAINERS OVER. SEE FRONT AND END ELEVATIONS.
3/4" 3 WAY OBSERVATION TUBE (GLASS)
3/8 RUBBER TUBING TO GLASS CONTAINERS.
3/4" RUBBER TUBING CONNECTIONS
3/4" RUBBER HOSE PIPE TO 2 WASTE PIPE ON WALL - SEE TYPICAL PLAN.
RUBBER AIR OUTLET TUBE & VALVE
3/4" 3 WAY GLASS OBSERVATION TUBE.
3/4" RUBBER TUBING TO RECTAL TUBE.
TO STAND OVER W.C OR A REMOVABLE RECEPTACLE.
X — LABORATORY TUBE CLIPS.
TOP OF I.S.G. ZINC.
6'-4"
PLAN OF TABLE TOP

FIG. 1.

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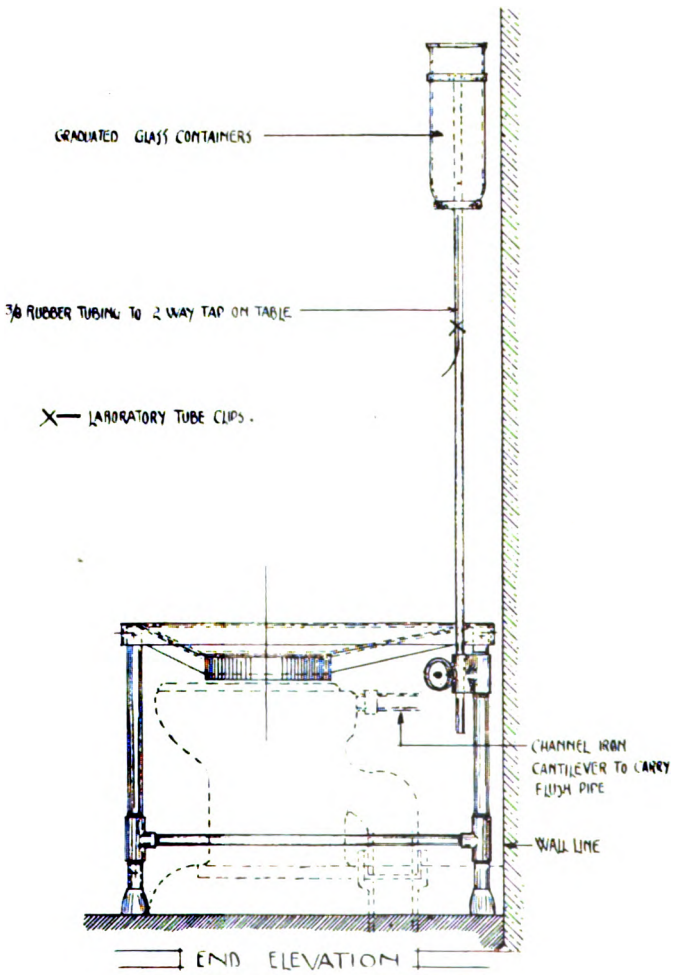
GRADUATED GLASS CONTAINERS
3/8 RUBBER TUBING TO 2 WAY TAP ON TABLE
LABORATORY TUBE CLIPS.
CHANNEL IRON CANTILEVER TO CARRY FLUSH PIPE
WALL LINE
END ELEVATION

FIG. 2.

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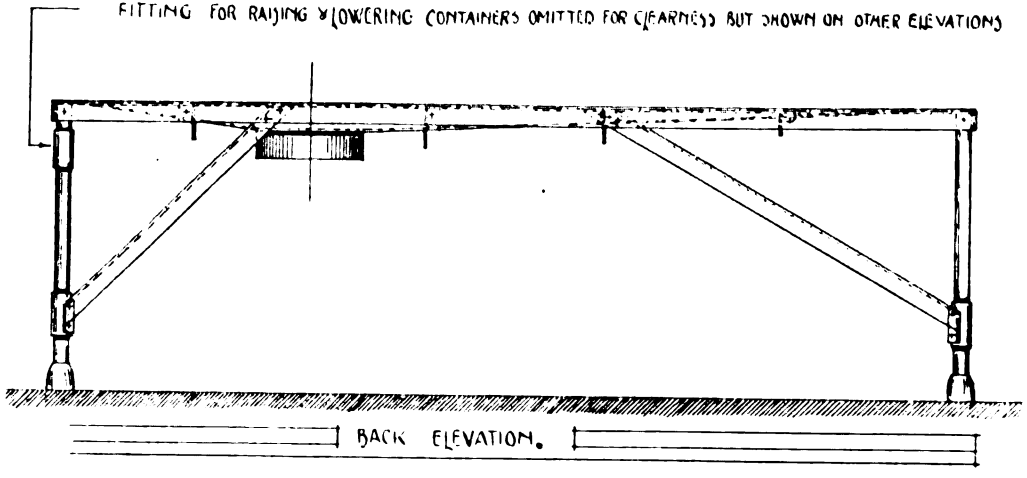
FITTING FOR RAISING & LOWERING CONTAINERS OMITTED FOR CLEARNESS BUT SHOWN ON OTHER ELEVATIONS
BACK ELEVATION.
NOTE IF REMOVABLE RECEPTACLE IS USED AND IT IS FOUND NECESSARY TO REMOVE THE RECEPTACLE FROM THE FRONT OF THE TABLE THIS ELEVATION - REVERSE HAND - MUST BE USED AND THE FRONT ELEVATION, AS SHOWN, USED AS THE BACK ELEVATION.

FIG. 3.

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GRADUATED GLASS CONTAINERS
⅜ RUBBER TUBING TO 2 WAY TAP ON TABLE
LABORATORY TUBE CLIPS.
¾" GALV PIPE
FRONT ELEVATION
1½"×1½"×⅜" L IRON FRAMING AND BRACKETS
1" GALV STEAM PIPE
¾" " " "
NOTE. ALL TAPS, IRRIGATION AND WASTE TUBES, ETC. OMITTED ON ELEVATIONS FOR CLEARNESS BUT SHOWN ON PLAN.

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white metal, 3s. 6d. For greater security two wheels can be used, one above the other.

One or two glass containers may be used as desired (Fig. 4). Where one is used the capacity is five pints. The containers are marked outside by painting lines indicating half-pints. The painting is done by the hospital painter. The containers are supplied by Messrs. Philip Harris & Co., Ltd., of Edmund Street, Birmingham, and they, or Messrs. Baird & Tatlock, of London, supply the glass ⊥-pieces.

Attached to the right end of the table are two ordinary taps, ¾ in. internal diameter, with short tubes bearing external corrugation. Each tap has a base fixed into the table into which is seated by means of a screw the body of the tap.

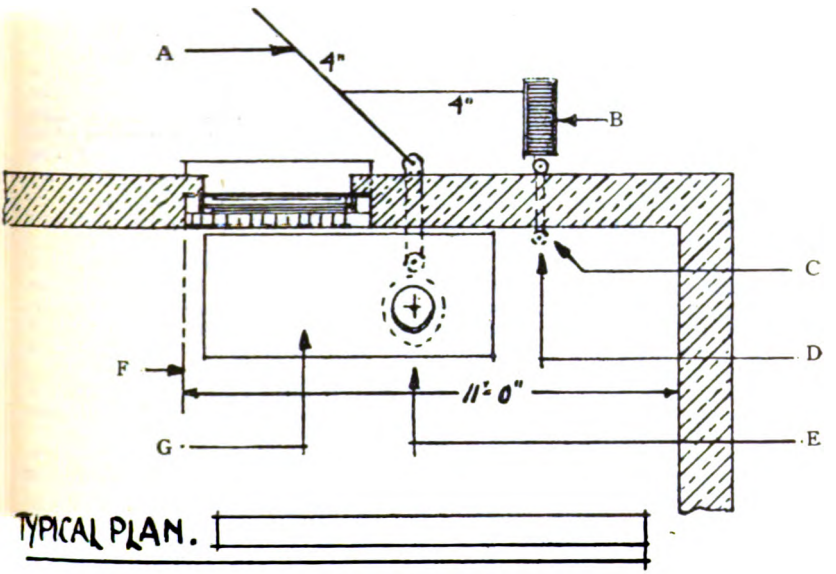

FIG. 5.—A. Connected to soil drain. B. Sykes' disconnecting slipper and trap with 2" back inlet. C. 2" waste pipe (9" above floor with flap) for waste from table. D. ¾" cold water tap (over waste pipe) with hose connection for flushing trap after use. E. W. C. under table (inserta wood rim seat) flushing cistern over. F. Wall if restricted for space. G. Table in position for use.

This seating enables the tap to be removed for sterilization. As these parts are interchangeable it is advisable to have two or three sets for each table, excluding the bases (Fig. 1).

One tap, fixed at the front right-hand corner, is the sewer tap; the other a little distance behind it is the container tap. Their setting makes a right angle with the glass piece (Fig. 1).

Depending on whether one or two containers are used the tube of the container tap on the side towards the container rod is single or bifurcated (Fig. 1).

These taps have been supplied by Messrs. Chas. Winn & Co.—gun metal 12s. 6d., white metal 15s. 6d. each.

Attached to the right end of the sewer tap is thick rubber hose-pipe, which passes to the waste pipe (see Fig. 5).

This pipe is a short length, of 2 in. internal diameter, sufficient to permit the thick rubber hose-pipe to fit into it easily but not too loosely. This waste pipe,

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fixed in wall or floor, passes to a Sykes' disconnecting slipper and trap, and so to the sewer drains.

A water tap can be fixed above the waste pipe for flushing purposes, or it can be constructed with a funnel end in the room for flushing by means of jugs of water.

If it is decided to instal a water-closet pan under the table, the necessary arrangements and outflow can be linked to that from the waste pipe as in Fig. 5.

However, to limit the expense a removable sanitary receptacle containing disinfectant can be used.

Experience shows that for cases with relaxed sphincters the aperture in the table and a receptacle or pan beneath are necessary. For the same reason padding the surface of the table is not desirable; a loose mattress and pillow, with mackintosh covering, for the patient to lie on is preferable. Such articles can be sterilized. The zinc top can be washed down with disinfectant, and the washings pass down through the aperture into the receptacle. The mattress is placed at the left end of the table and reaches to about 9 in. of the aperture. Turning to Fig. 1, it will be seen that there are two glass pieces, of $\frac{3}{4}$ in. internal diameter throughout, on either side of the aperture in the table. Corrugation or roughening of the outer surface of the ends of these pieces is an advantage. The glass piece to the right of the aperture is connected fairly rigidly by short lengths of pressure rubber tubing to the two taps. The remaining end of this glass piece is connected to the glass piece on the left of the aperture by a longer piece of tubing, enabling this glass piece to be moved freely as may be desired. The first glass piece lies wholly flat on the table; the second is arranged so that its short limb can be placed in the vertical position by standing against a bowl or kidney dish.

To this short limb is attached a short length, 6 in., of pressure tubing, which is controlled by a strong laboratory clip. To the remaining end of this glass piece is attached the rectal rubber tube, also provided with a strong laboratory clip.

We have found that 2 ft. of pressure tubing of $\frac{1}{4}$ in. internal diameter, shaped at the end and with two lateral apertures, serves the purpose of a rectal tube, and is economical and strong. It can be marked at 4, 6 and 9 in. from the nozzle.

Many modifications can doubtless be made in this arrangement of the table as ingenuity and financial resources dictate, but this description fulfils the requirements of economy whilst providing a simple, effective apparatus.

A three-way tap can replace the two taps and the first glass piece, but the two-taps arrangement we employ appears to permit of better control and variation of the inflow from the container.

The first glass piece can be replaced by a similar piece in rubber. It is, however, important to have the second glass piece for observation, liberation of gas from the tubes by release of the clip on its rubber attachment, and for taking off samples of the outflow through the rubber attachment.

Additional modifications are: arrangements for warming the table, as for an operating table—this is a refinement which can be met in other ways; the zinc top may be replaced by more costly material, etc.

The approximate cost of the materials enumerated below is £4 10s.

	£	s.	d.
Steam tubing and fittings to make stand	1	5	0
Angle iron and round iron		7	2
Sheet zinc		12	6
Two taps	1	11	0
Wheel and screw		3	6
Bolts, nuts, screws and solder		3	8
Four teak wood feet		2	0
Paint and enamel		3	0

Add cost of containers, tubing, glass pieces, receptacle or closet-pan, etc. If a succession of patients are to be treated, several sets of rubber tubing and glass pieces should be provided.

Irrigation Room.

The room in which the treatment is given should have adjoining it a water-closet for patients' use before and after irrigation.

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The room should have heating arrangements, *e. g.*, a radiator with a metal shelf above, enabling jugs of prepared saline solution to be kept warm; a sink and taps with hot and cold water, buckets or a small enamelled bath for disinfection of the rubber and glass tubes. The metal taps are sterilized by boiling.

An adjoining room, or the one provided with a water-closet and furnished with a low bench enables enemata to be given separately from the irrigation room.

Method of Irrigation.

Fluids employed.—The fluid usually employed is the simple saline, a teaspoonful of common salt and half a teaspoonful of sodium bicarbonate to a pint of water at about 100° F. Hydrogen peroxide may be added to this simple saline, an ounce (20 vol.) to the pint, or potassium permanganate, in weak solution, just definitely colouring the water.

Preparation and position of the patient.—After the bowel has been cleared by a soap-and-water enema the patient lies on the left side on the table with knees drawn up. When two or three hundred ounces have been used the patient turns onto the right side without removal of the tube from the rectum.

Filling the apparatus and introduction of the rectal tube.—The essential point in the irrigation is to prevent, as far as possible, the introduction of air into the bowel, and to effect the removal of any bowel gas from the system of tubes as soon as possible. The slow introduction of large quantities of water causes little inconvenience, but pain is experienced when gas is formed in or introduced into the bowel.

The containers are filled with the selected fluid, the sewer tap is closed and the container tap opened. By relaxing the clips air is eliminated from the tubes. The rectal clip is clamped at about 4 in. from the nozzle end of the rectal tube. Some air will inevitably remain in the space between the nozzle end and the clip, and will pass into the bowel when the irrigation commences. The container tap is opened about a quarter of its bore. The nozzle end is lubricated with vaseline and introduced into the anus. When the sphincters have been passed the rectal clip is released; the rectal tube lying then in its ring, the fluid flows into the rectum, as determined by the extent of the opening of the container tap.

While the fluid is gently flowing in and dilating the rectum the rectal tube can be passed further into the bowel to a distance of about 6 to 9 in.

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The Continuous Irrigation.

The irrigation now commences. Fluid flows in slowly until half a pint to a pint has entered. Then the container tap is closed and the sewer tap opened. Fluid should now flow backwards and bring with it any air which has entered the bowel at the nozzle end. Air or bowel gas thus returning passes along the tubes, and perhaps passes the sewer tap; if it does not it can be trapped in the upright of the rectal ⊥-piece, and is liberated by releasing the clip on the rubber attachment when the pressure is raised in the tubes by opening the container tap. Trapping gas in the tubes is further facilitated by elevating the rectal glass ⊥-piece from the table.

It is important at this commencing stage to make sure of a satisfactory return of fluid and gas. The commonest hindrances are blockage of the nozzle by fæces, or of the openings by mucosa or Houston's valves, gripping of the tube by the contracting rectal wall, or its kinking in the rectum.

To obviate these the tube should be moved up and down or rotated until a satisfactory return flow does occur. If fæces are blocking the tube the patient should be removed from the table and sent to the closet.

When a situation is found at which inflow and outflow are satisfactory, it is desirable to retain it during the subsequent irrigation. When the outflow current has ceased, more fluid is run in by opening the container and closing the sewer taps. The amount run in will depend on the patient. In some cases not more than 10 oz. are tolerated at a time; in other cases two or three pints may be accepted at one inflow.

When the co-operation of the patient can be secured by the use of words, he is instructed to call out "Pain" as soon as he feels discomfort. Instantly, then, the sewer tap is opened and container tap closed. Before the next inflow he is instructed to say "Pain gone."

In those who are unable to co-operate by the use of words the amount of inflow should be restricted and watch kept for any indications of discomfort, such as flexing the toes, ankles, knees or other movements, which experience may show to be characteristic of the individual patient.

The total amount of fluid used will depend on circumstances. At the first of a course of irrigations the amount should be small, say half a gallon, so as to gain the patient's confidence. The usual amount used here is 4 gallons for an irrigation. Ten gallons have

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been administered in some cases without removal of the patient from the table.

The character of the return is noted, especially its rapidity and content.

In some cases the rate of return is very slow, in others it is rapid. The rate of return affords an index of the muscle tone of the bowel.

Slow returns may be noted to increase in rate with improving general health of the patient. The contents will vary, dependent on the state of the bowel. Some may give clear returns consistently. In such cases, after two or three irrigations, unless other reasons obtain, no further irrigations need be given. At the other extreme are cases where masses of thick muco-pus or even pus are seen in the first return.

It is not uncommon to find that the first few returns at a first irrigation are relatively clear, but as the irrigation proceeds, the returns contain increasing amounts of muco-pus, indicating that there is present higher up in the bowel a chronic inflammatory process which has not yet reached the descending colon. Relaxation of the sphincters may be met with, indicative of diminished muscle tone, leading to leakages at the side of the rectal tube. Inability to hold the inflows may also be due to fæces or gas-formation, the latter especially when peroxide or permanganate are used. Small nflows should be used when these agents are employed.

Permanganate and peroxide irrigations should be preceded and followed by a saline irrigation. Diminution in character and amount of muco-pus, in and increased rate of, the outflows indicate an improving state.

Temporary increase in the amount or re-appearance of muco-pus may be associated with the pre-menstrual phase, with non-specific protein treatment or with an exacerbation of a catarrhal state of the mucosæ in the head, "a common cold." Following treatment of a septic state in the head soiled returns become less muco-purulent and eventually clear.

It has been stated that colon irrigation produces or increases a mucous colitis. That cannot be said to be our experience, and it is not improbable that in cases where such an observation is apparently true the explanation is that a septic state higher up the alimentary or respiratory tracts has not been adequately treated. Irrigation should be instantly stopped if blood appears in the returns. Worms have in one or two cases been noted in the outflows.

Removal of the tube.—When it is decided that the irrigation is to be terminated, the outflow currents should be allowed to cease

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gradually; the rectal tube is removed inch by inch. If peristaltic waves re-appear, withdrawal should cease until the currents have stopped. Withdrawal of the nozzle through the anal sphincter should be very gradual. On removal of the tube the patient is sent to the closet. All the tubes are now flushed out with saline and removed from their connections on the table, thoroughly cleansed, immersed for a period in antiseptic and again washed with water before use. Meanwhile another set of tubes is fitted to the table and another patient can be treated.

Care of the Patient in General.

Before, during and after the irrigation the patient should be kept warm, and in winter especially it is desirable that he should go to bed for the remainder of the day after an irrigation. A warm drink after an irrigation is also an advantage. Rectal prolapse and hæmorrhoids, when due only to toxic loss of tone of the sphincters, have been observed to improve after colon irrigation. In such cases, and even when such local conditions do not obtain, the most painful part of the proceedings is the passage of the tube through the anal sphincter. This should be done gradually but firmly. Fearful subjects should be reassured on this matter and on the incidence of leakage from the anus alongside the tube.

Advantages of the Method.

The advantages of this method of mechanical and antiseptic treatment of intestinal toxæmia over the ordinary, non-continuous irrigation are many. In the ordinary method either only a limited amount of fluid can be introduced or the tube has to be inserted several times, and insertion and withdrawal of the tube are the most painful parts of the proceedings, owing to sphincter stretching and recoil.

By the continuous irrigation method large quantities of fluid can be used following one insertion of the tube. Observations of the content and character of the return flow can be made with ease. The quality of the peristaltic waves of the bowel are transmitted along the length of water. Air and gas are easily eliminated and samples of the return are easily obtainable.

Above all, except in those cases where sphincter tone is weak,

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the whole irrigation can be carried out with absolute cleanliness and complete absence of foul odour in the room. The patient is recumbent during the whole of the proceedings, and need not be placed in the vertical position when the bowel is filled with a large quantity of fluid. The quantity eventually used may be large, but the individual inflows can be small and are easily regulated. On the slightest indication of discomfort the sewer tap can be opened, thus releasing the pressure, and the container tap immediately closed.

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A NOTE ON THE SEARCH FOR FILTER-PASSING ORGANISMS IN CASES OF SCHIZOPHRENIA.*

By J. S. Ian Skottowe, M.B., Ch.B., D.P.M.,
Deputy Medical Superintendent, Cardiff City Mental Hospital.

The object of this paper is to place on record some work which has been done during the past fourteen months in the laboratories of the Cardiff City Mental Hospital. This work, which is in the nature of animal inoculation experiments, was done with a view to detecting the presence of any filter-passing organisms which might be present in cases of schizophrenia. The justification for this line of research depends upon the suggestions that have been made by American and Continental writers that there are many striking points of resemblance between epidemic encephalitis and schizophrenia. In this country, Farran-Ridge (1) has pointed out the striking similarity of the motor phenomena in certain cases of these two conditions. He draws attention particularly to fluctuation in body-weight, blepharoclonus, pruriginous phenomena, chewing movements, greasy face, respiratory disorders and choreiform manifestations. It has been suggested that these symptoms may be due to involvement of the basal ganglia. This being so, there is *primâ facie* evidence that some cases of both encephalitis and schizophrenia are the outward manifestations of similar disease-processes. In the case of encephalitis, Levaditi (2), Loewe, Hirschfield and Straus (3) and others have done work which suggests the existence of an ultra-virus of variable virulence which may exist in the saliva, the central nervous system, herpetic vesicles and elsewhere. If, therefore, these premises are correct, it would be valid to search for a similar virus in schizophrenia.

Outline of technique.—The manner in which this work was undertaken was as follows: Selected cases of schizophrenia were taken as early as possible in their course, and materials removed from them in various ways. Thus the cerebro-spinal fluid was taken, tonsils were enucleated, the naso-pharynx was scraped and a piece of mucosa was removed from it, and saliva was obtained.

* Communicated on behalf of the Clinical and Pathological Staff of the Cardiff City Mental Hospital.

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Each of these materials was macerated or mixed with buffered broth, which was then filtered through a Berkefeld "N" filter, and the resulting filtrate was injected into rabbits, $\frac{3}{10}$ c.c. subdurally and $\frac{3}{10}$ intra-cerebrally, each rabbit being trephined for this purpose under general anæsthesia.

The rabbits were then carefully watched for the development of neurological symptoms. Some of them died; others were killed at the expiration of three months. In all cases the brain was removed aseptically; and where it was thought that a rabbit had shown symptoms, part of the brain was macerated with buffered broth and injected into another rabbit. The rest of the brain was divided into two parts, one of which was kept in glycerin and the other (the trephined half) sectioned and examined microscopically.

The greatest care was taken throughout to avoid septic infection, and this was constantly checked by cultures made from the filtrates and brains of dead rabbits. Any case presenting septic infection was discarded.

As regards the question of controls, material was taken from the naso-pharynx of two healthy adults, and rabbits were inoculated with it as in the case of the schizophrenics. In addition to this, the brains of two segregated captive rabbits were used as controls in order to show what was presumably a normal rabbit's brain. Two wild rabbits were snared and similarly examined; and four rabbits were injected with buffered broth in order to determine whether this alone could produce any pathological lesions in the brain.

Clinical material.—Eight cases of schizophrenia were dealt with in as early a stage of the disease as possible. This was not by any means as early as one would have liked, in spite of possibilities at the Out-Patient Clinic at the Cardiff Royal Infirmary; but in no case had the disease been in progress more than three months, so far as could be ascertained.

It is said by the protagonists of this theory of the similarity between schizophrenia and encephalitis that the katatonic forms of schizophrenia are the ones mostly concerned. In our experience, during the period May, 1928 to July, 1929, we did not come across one case of what could be regarded as a pure katatonic form. Therefore, for purposes of this work, cases had to be selected which presented katatonic features in a mixed setting.

As this communication is more in the nature of a note on the technique, it is not proposed to describe at length the cases concerned. The essential criterion was disintegration of the psychic

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functions, particularly disharmony between mood and thought, together with emotional "slumping" or apathy, and the presence of such motor phenomena as attitudinizing, grimacing, mannerisms and so forth. No case which did not fulfil these criteria was utilized for purposes of this work. All were young, and free from gross organic disease.

Results of the work.—Stated in concise form, the following are the results obtained. From the 8 patients, 60 rabbits in all were inoculated, and there were 11 control rabbits. Of the 60 inoculated rabbits, 16 showed definite microscopical changes in the brain. These changes were sub-ependymal proliferation, dilatation of pericapillary spaces and small areas of cellular infiltration close to the lateral ventricle. Of the 11 control rabbits, one rabbit showed similar changes to the above. This rabbit had been inoculated from a presumably healthy adult. The other control rabbits showed apparently normal brains.

As regards the development of symptoms in rabbits prior to death, it was found that these were so equivocal that no scientific importance could be attached to them. Tremors of the hind legs, transitory palsies, spasticity and nasal obstructions were fairly common, but they occurred in control rabbits as well as in inoculated ones; and, moreover, were detected quite frequently in absolutely untouched rabbits which had been in captivity.

Conclusions.—(1) So far, no definite, specific changes have been obtained in rabbits' brains inoculated with material from cases of schizophrenia.

(2) The difficulties in this type of work are very great. Bearing in mind that rabbits are subject to a spontaneous encephalitis of their own, it is exceedingly difficult to assess how far such changes as have been observed are due to this, and how far they are due to the results of inoculation. Further, it is very difficult to keep and segregate the rabbits so as to eliminate the possibility of infection from one to another.

(3) Even with the advantage of a psychiatric clinic attached to a general hospital, psychiatrists are not brought into contact with cases of schizophrenia until comparatively late in the course of the disease.

Bearing in mind that even in encephalitis, active material can only be got from the naso-pharynx in the very early and acute stages of the disease, it is unlikely that anything will be found in schizophrenics even so little advanced as those with which we were dealing.

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(4) The question of how to remove potentially infected material from these patients is a difficult one. In our cases, it involved the use of a general anæsthetic, and more or less extensive damage to the naso-pharynx, with consequent discomfort and upset to the patient.

This brief survey of the work which has been done at Cardiff is intended principally to point out the difficulties and pitfalls of an investigation of this sort, and it is not felt, even after fourteen months' work, that on the evidence before us we are justified in making a positive statement one way or the other.

References.—(1) Farran-Ridge, *Journ. Ment. Sci.*, lxxii, pp. 513 *et seq.*—(2) Levaditi, Harvier and Nicolau, *Ann. de l'Inst. Pasteur*, February, 1922.—(3) Loewe, Hirschfield and Strauss, *Journ. Infect. Dis.* (Chicago), 1919, xxv, pp. 378 *et seq.*

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Medico-Legal Notes.

REX *v.* JAMES ACHEW.

This case was tried at the Central Criminal Court, on January 17, 1930, before Mr. Justice Avory. The accused man was charged with the murder of Sybil Sarah da Costa. They appear to have lived together as man and wife, and to have kept a boarding-house. The accused man had formed the idea that the deceased woman had been unfaithful to him, although there appear to have been no grounds for such a supposition. Early in the morning of November 14, 1929, the deceased woman was found at the top of the stairs with ten wounds in her throat, apparently inflicted with a razor. The accused was found in the kitchen with his head in a gas oven and with his throat cut, the wound not being of a severe character. The facts were not disputed, and the defence was that of insanity.

Dr. W. R. K. Watson, medical officer of Brixton Prison, gave evidence in support of the defence. The accused had expressed extravagant suspicion of the woman on evidence which no sane man could accept. Dr. Watson considered that the accused probably knew what he was doing at the time of the act, but was so excited that he did not know that the act was wrong. The judge asked: "Jealousy without good cause is not, in itself, evidence of insanity?" Witness: "No." The Judge: "Apart from this delusion of infidelity, is the prisoner otherwise sane?" Witness: "He has no other delusions; but the one he has could not be held by a perfectly sane man."

The prisoner was found "guilty," and was sentenced to death.

The case came before the Court of Criminal Appeal, on February 3. The Court was asked to decide that a verdict of "guilty but insane" was the only possible verdict in the case, and to substitute such a verdict for that found by the jury. Mr. Justice Talbot, in giving the decision of the Court, said that there was evidence upon which the jury could have found a verdict of "guilty but insane," but that the evidence was not such as to render this the only possible verdict. The accused had an insane delusion that the woman was unfaithful to him; and she would have been a most

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abandoned woman had she done what he said she had done. There was no ground even for suspicion on the part of the accused. But this situation did not justify murder. The learned judge referred to the judges' answer to the fourth question in the McNaghton case. The question was, " If a person under an insane delusion as to existing facts commits an offence in consequence thereof, is he thereby excused ? " The reply ran, " The answer must, of course, depend on the nature of the delusion ; but making the assumption that he labours under such partial delusion only, and is not in other respects insane, we think he must be considered in the same situation as to responsibility as if the facts to which the delusion exists were real. For example, if under the influence of his delusion he supposes another man to be in the act of attempting to take his life, and he kills that man, as he supposes, in self-defence, he would be exempt from punishment. If his delusion was that the deceased had inflicted a serious injury to his character and fortune, and he killed him in revenge for such supposed injury, he would be liable to punishment." The learned judge said that the verdict of the jury must stand, but that this decision did not, of course, affect any action which the Home Secretary might see fit to take in the matter.

It was announced, a few days later, that Achew had been reprieved on medical grounds, and would be detained at Broadmoor Criminal Lunatic Asylum. Probably the Secretary of State acted under the Criminal Lunatics Act, 1884, Sect. 2 (4). This directs that when the Secretary of State has reason to believe that a prisoner under sentence of death is insane, he shall appoint two or more medical practitioners to examine the said prisoner, and to inquire into his insanity. Such was the course adopted in the case of True, in 1922.

The part of the McNaghton criteria at issue in this case, although not so often quoted as that which concerns the " nature and quality of the act," has been subject to adverse criticism. Mercier put it that the judges' answer assumes that the man's disease consists exclusively in the fact that he is under a mistaken belief, and that he possesses the same power of appreciating and reasoning about the fact in which he mistakenly believes as has a sane man.

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Occasional Notes.

MENTAL TREATMENT BILL, 1929.

REPORT OF THE PARLIAMENTARY COMMITTEE.

(*All references are to the Bill as brought from the Lords, December* 20, 1929.)

The Parliamentary Committee referred the consideration of this Bill to a Special Sub-Committee which reported its findings to the Parliamentary Committee at a Special Meeting on January 17, 1930.

After a full consideration of this report and of the Bill the Committee came to the following conclusions:

"The Bill, taken as a whole, shows a welcome advance as to the treatment of mental illness. It adheres to the general principles the Association has already laid down as regards voluntary boarders.

"The Committee is of the opinion that the Bill should guarantee the number of medical strength on the Board and in regard to the Board's officers. This should be at least equal to the lay strength, As the Bill stands at present it is possible to have only one medical man in the whole department, *i.e.*, one senior commissioner. All the rest might be lay persons. Adequately paid commissioners (not assistant commissioners) should be provided for the statutory visitations of the mental institutions.

"The Committee thinks that the word 'boarder,' as used in the Bill, is inappropriate, and that it should be replaced by 'patient.' Such a substitution would tend to establish the proper professional relationship of doctor to patient—so very desirable in medical treatment.

"The Committee has always taken exception to the use of the word 'temporary' both as regards patients and their treatment. Its use in mental cases implies that the patient should really be dealt with under the principal Act as a person of unsound mind, and that, as a favour, this is postponed if recovery may be expected within a stated period. This, the Committee submits, is

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not the proper approach. The Royal Commission has laid it down, as many have done before, that certification should be the last resort, *i.e.*, when such a patient refuses to enter an institution for the care and treatment necessary. A 'non-volitional' mental case has not refused treatment, and should not be visualized as a possible certified person until this necessity arises. The terms 'treatment' without qualification and 'non-volitional' patient should therefore be used throughout the Bill, and lines 26 and 27 of Part II, Schedule I, appropriately amended.

"The amendments made in the Bill during its passage through the House of Lords were largely those the Committee thought desirable. This refers chiefly to the alteration of age in Clause 1, Sub-Clause 2; the requirement of a Medical Certificate in the case of 'boarders' under 16 years of age; the addition of Sub-Clause 13 to Clause 5, extending the possible period of treatment to 12 months, and of Sub-Clause 16, which gives the same protection to the property of persons under 'temporary' treatment as to those under an Inquisition or under Reception Order."

The following further amendments are recommended by the Committee:

"CLAUSE 1, SUB-CLAUSE (1), LINE 2.—*Omit* 'For mental disorder.' The presence of these words may give rise to difficulties in admitting cases showing only the early neurological and other physical signs of mental disorders, and may operate against fruitful measures of prophylaxis best carried out in mental institutions. Furthermore, it is recognized that some physical conditions yield to mental treatment when physical treatment alone fails, especially functional nervous disorders.

"CLAUSE 1, SUB-CLAUSE (5), LINE 28.—*Insert* '3 clear days' *instead of* '72 hours.' The former will, without doubt, operate more conveniently for both patient and hospital staff.

"CLAUSE 1, SUB-CLAUSE (5), LINE 36.—*After* 'detained' *insert* 'unless steps have in the meanwhile been taken to deal with the boarder under the principal Act.'

"CLAUSE 1.—Add a new sub-clause to the effect that 'The written application in Sub-Clause 1 for admission of a boarder shall be addressed to the medical superintendent or person in charge, who shall have power to admit, to refuse admission, to discharge a boarder and to take steps to have a boarder dealt with under the principal Act or under Clause 5 of this Act.'

"CLAUSE 2, SUB-CLAUSE (3), LINE 14.—*Insert* 'six' *instead of* 'one.' Contrary to cases admitted under Clause 5, the boarder

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has definitely expressed his desire in writing to be treated on a voluntary basis, and such wish should govern the situation as long as possible.

"CLAUSE 5, SUB-CLAUSE (6), LINES 41 AND 42.—The Committee finds that no useful purpose would be served by reporting admissions under this clause to the clerk to the visiting committee. On the contrary, it might lead to complications in administration. In the case of institutions where the Committee of Visitors does not meet at least monthly local machinery should meet the situation.

"Regarding the admission and disposal of non-volitional patients, all procedures under this clause should be carried out by the medical superintendent or person in charge, and the Committee thinks that this responsibility should be definitely fixed in the Bill. The Committee therefore desires that an additional sub-clause should be inserted to the effect that 'The written application in Clause 5 should be made to the medical superintendent or person in charge, and that the medical superintendent or person in charge should have power to admit, to refuse to admit, to discharge, to transfer to the voluntary status and to take steps to have the patient dealt with under the principal Act.'

"CLAUSE 5, SUB-CLAUSE (13).—Limits treatment to twelve months. It has apparently not hitherto been pointed out that most melancholics do not begin to show definite signs of improvement until about the twelfth month. Treatment without certification, if for this reason only, should therefore be available up to two years at least, and to save unnecessary reporting, 'subject to such reports as the Board of Control shall determine in each case.'

"SCHEDULE I, PART 2, LINE 26.—While 'non-volitional' is generally descriptive of patients to be dealt with under Clause 5, its meaning for practical purposes should be defined by altering this line to read: 'Does not express unwillingness to undergo in-patient treatment.' This would call for an appropriate amendment of Clause 3, Sub-Clause (2), lines 20 and 21, and Clause 5, Sub-Clause (1), line 36.

"NATHAN RAW, *Chairman.*
"H. G. L. HAYNES, *Hon. Sec.*

"*Approved by the Council, February* 4, 1930.

"R. WORTH, *General Secretary.*"

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REPORT OF THE COMMITTEE OF THE COUNCIL ON STATE REGISTRATION OF MENTAL NURSES.

THE Committee appointed to meet the General Nursing Councils consisted of the following members: Prof. G. M. Robertson, Sir Frederick Willis, Drs. Nathan Raw, D. Rambaut, F. R. P. Taylor, W. M. Buchanan, R. R. Leeper, M. J. Nolan, and Dr. J. R. Lord was co-opted.

Prof. Robertson was chairman and Dr. Buchanan secretary.

The meeting with the General Nursing Council for Scotland took place on December 7, 1928.

The meeting with the General Nursing Council for England and Wales took place on May 23, 1929.

Both meetings were amicable and the views of all the parties were freely expressed. The situation has been clarified, but no progress towards the adoption of the views of the Royal Medico-Psychological Association has been made.

The Chairman of the General Nursing Council for Scotland asked the Committee to state the proposals of the Association. These had been incorporated in a letter previously circulated to the members of the General Nursing Council, and were in effect that the Royal Medico-Psychological Association should conduct the examinations qualifying for the Council's Register of Mental Nurses, these examinations to conform to the regulations of the General Nursing Council and to be open to its supervision. The complaint was made that these proposals for co-operation were not sufficiently definite or detailed, and did not answer the offer made by the General Nursing Council in a letter dated April 20, 1928—an offer that if the Royal Medico-Psychological Association agreed to drop its Preliminary Examination and accepted in lieu thereof the Preliminary Examination of the General Nursing Council an arrangement might be made whereby the Final Examination for Mental Nurses should be conducted jointly by the two bodies. The suggestion that a small Committee should go into this matter was not entertained. When the Chairman of the General Nursing Council was asked to state in his turn what proposals the General Nursing Council were prepared to put forward to overcome the difficulties that everyone deplored, he replied that they made no proposals, as they thought these should come from us. He let it be understood also that by an arrangement with the General Nursing Council of England they could not agree to anything without previously consulting that Council.

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The meeting with the General Nursing Council for England and Wales elicited more information. The views of the Association were put before the Council by Prof. Robertson, Dr. Nathan Raw, Dr. Nolan and Dr. Leeper. The Chairwoman of the General Nursing Council read a detailed reply to many of the points in the General Secretary's letter, which the Council had considered carefully.

The General Nursing Council made two definite suggestions to the Association. The first that the Association should continue to hold its examinations, which the Council realized served a useful purpose. The second that the members of the Association should urge all their nurses to enter for the examinations of the General Nursing Council.

The first suggestion does not overcome the anomaly of the existence of duplicate examinations. The Council were apparently less concerned with this aspect of the problem than to relegate the Association's Certificate from its imperial position to the position of an ordinary certificate granted by a hospital to its own nurses. Throughout the discussion the Council tried to bring home to the Committee that our examinations and certificate had an inferior status to the State Examination; and, while estimable, it was placed by the Council on a level with the certificate of any hospital and no higher.

Other information emerged as well.

The Chairwoman said that nursing was a distinct profession of its own, and it would be demeaning to its dignity and self-respect that it should be regulated by the medical profession, as it would be if the Royal Medico-Psychological Association conducted the examinations and granted the certificates for registration purposes. Further, that the nursing profession was mainly one for women, and they were now about to manage their own affairs, ignoring the fact that so large a proportion of mental nurses are men.

Also that a body created by Parliament with powers such as the General Nursing Council had could not delegate its powers or even co-operate with a body of an inferior and different standing like the Association. That the question of expense was one that they would not open, as the Council was charging only what was necessary to carry out its work efficiently, and that mental nurses, being better paid than hospital nurses, had the least reason to complain.

And, lastly, that independent examinations could only be conducted by salaried examiners and not by voluntary workers—

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an extraordinary charge to make against the voluntary principle by a body representing so many hospitals with honorary staffs.

No meeting was considered necessary with the General Nursing Council of Northern Ireland, as the policy of that Council is largely influenced by that of the sister body in England and Wales.

No meeting with the General Nursing Council of the Irish Free State was necessary, as the certificate of the Royal Medico-Psychological Association is recognized by that body as entitling the holder to registration in the Mental Section of its Register.

It is the feeling of your Committee that an effort has been made in a friendly spirit to overcome evils that both the Nursing Councils and the Association recognize and deplore. This effort has not met with success and no advance towards co-operation with the Association has been made by the Nursing Councils. Under these circumstances the policy of the Association, the Committee humbly submits, should be to concentrate all its efforts towards improving and strengthening its own examinations and certificate of proficiency, so that the respect in which these are held throughout the English-speaking world should not diminish, and that their popularity with our nursing staffs should continue.

GEORGE M. ROBERTSON, *Chairman.*
W. M. BUCHANAN, *Secretary.*

February, 1930.

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Part II.—Reviews.

Sterilization for Human Betterment. By E. S. Gosney, B.S., LL.B., and Paul Popenoe, D.Sc. New York: Macmillan Co., 1929. Crown 8vo. Pp. 202. Price $2.

Sterilization of the Unfit. By Lord Riddell. H. K. Lewis & Co., Ltd. Pamphlet. Pp. 31.

"Under Nature's law we bred principally from the top. To-day we breed from the top and bottom, but more rapidly from the bottom." The authors of *Sterilization for Human Betterment* give this reminder, and it makes us realize that much of present-day Hindu decadence has resulted from a futile endeavour to avoid just this evil. And lest we drift further in the same direction, any efforts to avoid racial deterioration by sterilization demand full and unprejudiced examination, Messrs. Gosney and Popenoe are well qualified for the task they have assumed. They put forward their views with reasoned moderation, making no undue claims for sterilization, nor pretending to have discovered a panacea for State bankruptcy. They even point out that the insane and actual mental defective are not propagating sufficiently to keep up a defective stock, but that the potentially defective, the dullards and neurotics breed a progressively larger proportion of each generation. They make half-hearted suggestions that syphilis, cancer, tuberculosis and serious disease of the heart, lungs or kidneys might be treated by sterilization; Huntington's chorea is mentioned, but not hæmophilia.

The method recommended is that usually accepted—vasectomy in the male, salpingectomy in the female; why they advise excision of an inch of the ducts or tubes is not quite clear, for simple ligature is probably equally effective. They record 6,255 sterilizations in Californian State Hospitals prior to 1929 (601 more males than females) and 1,488 in the State colony at Sonoma (330 more females than males). At present 1 in 6 admissions to the former and all the discharges from the latter are treated; there have been 7 recorded failures and 3 deaths. The essence of the book is in the introduction; the rest is rather prolix, with some repetition. There are chapters on "The Problem," "History of Sterilization," "Effect on Sexual Life," "What the Patient Thinks," "Effect on Behaviour," "Eliminating Genius," "Voluntary Sterilization," "Criminals," "The Operation," "Personal Reasons," "Social Reasons" and "Eugenic Reasons." The usual arguments are set forth, but little that is fresh. There are some appendices, the best of which is a *résumé* of an article by Dr. Joseph Mayer, a Catholic Priest connected with Freiburg University, explaining the views of his Church.

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It would appear that the "double effect" must be considered, *i.e.*, sterilization is lawful as a therapeutic measure, but not as a contraceptive; even an æsthetic object is permissible (the castrate sopranos in the Sistine choir are quoted) if that object is an aid to devotion. In any case the question has never been authoritatively answered by Rome, and so there is room for individual opinion. Apart from religious grounds, probably few in modern Europe would object to the operation being legalized for therapeutic or voluntary cases, but a noisy minority would be sure to protest on account of interference with the freedom of the individual, or from a vague sentimental feeling against mutilation or from fear of the suggestion of retaliatory punishment.

The estimates of mental disorder and defect in U.S.A. make English figures look small: Population, U.S.A. 120,000,000, England 40,000,000; in mental hospitals, U.S.A. 300,000, England 122,000; feeble-minded, U.S.A.—mental age under 7, 1% of the population, mental age 7 to 9, 1%, morons, 2%, in all 4,800,000 under 75% of normal intelligence. Then they go on to estimate that another 4,800,000 are insane some time in their life, *i.e.* 16 times the mental hospital population. Applied to England this figure would be 1,888,000 mentally ill at some time in their life, which is absurd. Our authors must have been unconsciously influenced by the phrase "submerged tenth"—4% insane, 4% defective, 2% recidivist. On the other hand, all the English estimates of mental defect are far too low, such as that of the Joint Committee's recent Report—·75%. The fact is, calculations are impossible and at best mere guess-work, although the average standard of intelligence among civilized races is uniform.

Lord Riddell in his pamphlet suggests that "sterilization of the unfit" would save the country the maintenance of 225,000 unfit persons; he estimates the capital cost of these at £29,000,000 and the annual expenditure at £16,000,000. We may accept his number of patients, but it is a pity his financial calculations are so wild. He loses sight of the fact that at present the defective is being maintained out of another of the ratepayers' pockets, and is returning nothing of his keep in the way of work, whereas in a colony he would do so. It may be true that "unless we are careful we shall be eaten out of house and home by lunatics and mental deficients," but to offer "an alternative solution, namely sterilization," is merely ludicrous. Let us see where we stand. 122,000 persons in mental institutions means about 40,600 discharges which are lasting. Possibly half of these are socially or sexually in a position to procreate—that is, 20,300 insane suitable for sterilization. Of 67,000 institutional defectives certainly not more than 11,000 could live outside if sterilized. Of the remainder in the country, 300,000 less 67,000, that is 233,000, at least half would be physically incapable of procreation, that is, 117,500 suitable for sterilization, making a grand total of about 149,000 to whom by any stretch of imagination such a method could apply, and this out of a total of 4,000,000 potentially neurotic or defective—in other words, 3·7%. It is just to this extent, and no more, that sterilization would diminish

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mental inefficiency. Dr. W. A. Potts gives the Birmingham figures as 1,064 defectives in institutions or awaiting admission, and 896 under supervision; "a small number" of the former might live outside if sterilized, and 16% of the latter would so be rendered safer. But he points out that the spread of venereal disease by a large section of sterilized defectives may easily cause more national inefficiency than the same number would if allowed to procreate.

Lord Riddell says: "Proposals for sterilization are much misunderstood . . . only very moderate measures are proposed." We may underline *very*, and put "3·7% of defectives" in brackets. But let us refrain from adding "much ado about nothing," for of course we agree that 3·7% is better than nothing. All we ask is that when this has been accomplished and the public finds that mental defect has not diminished, it will not turn and rend the "experts" of the day. For the dull, but industrious, unskilled worker, supporting him- or herself and pulling some weight in the community, for the man whose every alcoholic outburst leads to *delirium tremens*, for the woman who needs mental hospital treatment after six out of seven confinements, sterilization is ideal; but in practice the idiots and low-grade imbeciles have no chance of propagating, and many of the higher grades are too anti-social to live outside an institution, and these are the types upon which money would still have to be spent. And what system of sterilization could touch the rest? As Dr. E. O. Lewis says, the "carriers" are the most prolific members of the race. Some of us believe that the aggregation in a chromosome of unit characters which represent primary amentia acts as a recessive Mendelian factor—and some of us do not. Certainly the records of the Kallikak, the Jukes and the Nam families, quoted in *Sterilization for Human Betterment*, do not support the theory, especially the first, where a man had in five generations 480 descendants by a feeble-minded woman, only 46 of them normal, and by a normal woman in six generations 496 descendants, only one not normal. But these figures are too extreme to be true; we simply do not believe them. All the statistics of neurotic heredity tend to show that civilized humanity is a vast aggregate of partial dominants for normal mentality, so that in every generation the pure recessives die out, but the partials continue for ever, and no system of sterilization within the realm of possibility can seriously diminish the sum of mental defect.

A profitable ancillary question is whether any better means of sterilization than vasotomy or salpingotomy could be devised. What we are up against is the delinquent and antisocial traits of the average mental defective, and upon these ligature of duct or tube has no effect. Castration is out of the question: history shows that if performed in youth it would produce mild but purposeless neuters, if in adult life savage and morose individuals with a grievance against the world; we know too much of the hysterical oöphorectomized female to desire to see it in this sex, and in any case we cannot prognose in childhood more than a few of the suitable cases. It is a pity that prostatectomy is such a serious operation, for there seems little doubt that the internal secretion of this gland stimulates

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the testicular hormones. Prostatic adenoma in old age seems to be an attempt to overcome failing sexual power, and produces two effects; in some the essential cells, whichever they may be, also increase, and "the old man in the park" appears; in others these cells undergo pressure atrophy, and sexual power and desire alike gradually fade. This last result would be invaluable in early life if we could apply it to the male mental defective, and we could neglect the female with ligatured tubes, erotic but sterile. We feel that the Report of the Joint Committee, while demonstrating the limited value of sterilization, might have been bolder in pushing the principle. W. F. MENZIES.

Les Pionniers de la Psychiatrie française avant et après Pinel. Par le Dr. RENÉ SEMELAIGNE. Paris: Librairie J. B. Baillière et Fils, 1930. Pp. 356. Price 50 frs.

The scope of this historical research is limited to periods of French psychiatry before and after Pinel. In a previous work Dr. Semelaigne dealt with Pinel and his epoch and, in addition, indicated who were to be regarded as Pinel's precursors from times of antiquity.

In the introduction the author points out that the new generation of psychiatrists, looking ahead and confident of the future, make a great mistake in ignoring the past, and in treating with disdain the work of those who have passed away and have made the present what it is. The younger generation, if compelled to look retrospectively, have hitherto had no definite guidance offered them. Realizing this disadvantage and its dangers, the author felt a wish to supply the deficiency. His first intention was to present a series of short biographies in the form of a dictionary and in alphabetical order, but on further reflection he rejected this in favour of a chronological order, which also gives a rapid impression of the development of French psychiatry.

These biographies are neatly drawn up and have the marks of a literary artist. The personality of the subject of each impresses itself on one and his part in the progress of French psychiatry is succinctly revealed. Biographical particulars are followed by a *résumé* of work accomplished, and a list of principal publications.

We are able to follow, without a moment's loss of interest, the march of events from the birth of Jacques Dubois in 1478 to the death of Morel in 1873.

The biographies of those who lived before Pinel occupy 85 pages (covering roughly 350 years), and of those since Pinel 243 pages (about 60 years). Pinel lived from 1745 to 1826. Despite the advantages the historian has in recording events since the beginning of the nineteenth century, this great disparity may be regarded as evidence of the tremendous impetus Pinel gave to the further evolution of French psychiatry.

The more extended biographies are those of Fernel, Daquin, Fodéré, Esquirol, Ferrus, Falret (J. P.), Georget Trélat, Leuret,

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Calmeil, Bayle (A. L. J.), Fovillé, Moreau (de Tours), Parchappe, Delasiauve, Renaudin, Baillarger, Morel.

The works of French psychiatrists since Pinel are by no means unknown in this country. Some of them are, of course, familiar to all of us. But of those before Pinel most of us would not be able to conceal our ignorance. We have found them of great interest, and well worthy of a much closer study than has been hitherto accorded them.

Dr. René Semelaigne has been an honorary member of our Association since 1911, and prior to that was a Corresponding Member from 1893. For many years, until the "Epitomes" section was instituted, he contributed regularly to this Journal a retrospect of French psychiatric literature. Increasing age and infirmities have of late years restricted his literary pursuits. All the more credit, then, to him for the authorship of the work before us, for it represents an amount of labour that the strongest among us would not lightly undertake.

Only a tireless devotion to psychiatry has enabled him to bring it to a successful conclusion, for which junior psychiatrists in France should be grateful, for it was in their interests that it was undertaken. The book is, in fact, dedicated to them:

"*Je dédie ce livre aux Jeunes, et le meilleur souhait qu'il me soit possible de leur adresser est de savoir unis l'effort de l'heure présente, l'espoir des jours futurs, au culte du passé.*"

It may be remarked here that the author has more than a professional interest in Pinel, for he is connected by descent with this great master. Pinel had also a son and a nephew who were psychiatrists, and their biographies are included in this book. Some particulars of them may be of special interest to our readers.

Scipion Pinel [1795–1859] had a lively intelligence, but was naturally unstable. His father founded on him great hopes and put him to study medicine, in which he qualified at the early age of 20. He commenced at once to practise psychiatry and occupied many such positions, becoming physician of the first division at Bicêtre in 1836, from which post he was dismissed three years later for reasons unknown to the author.

Scipion Pinel belonged strictly to the physiological school of psychological medicine. He published many works, the principal being *Physiologie de l'homme aliéné; Traité de pathologie cérébrale;* and *Traité complet du régime sanitaire des aliénés.*

He was perhaps the first to suggest the term "cerebral disease" or "cerebritis" for mental disease. As to his views on the pathology of mental disorders, they are so concise, logical and complete as to make one wonder why any further investigations have been necessary. Some survive with little alteration, some are suggestive of latter-day discourses, others remain in the region of pure speculation. We are distinctly attracted by his description of stupor or acute dementia as "asphyxia of the intelligence," but we doubt whether nowadays one would accept as a cause "an infiltration, a peculiar œdema of the convolutions."

From Dr. Semelaigne's description of Scipion Pinel's *Traité complet du régime sanitaire des aliénés*, 1836, it is a work of permanent value, and would need but little amending to make it of

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use at the present day. Extracts are: "Violent and dangerous patients ought to be carefully separated from others, without being abandoned to themselves." "Patients ought to enjoy the greatest liberty compatible with their personal safety and that of others." Occupations are recommended.

Jean Pierre Casimir Pinel [1800–1866], a nephew of the great Pinel, followed the family traditions [his father was a medical practitioner] and adopted medicine as a career. He joined the army as an assistant surgeon while yet a student, and qualified in 1826 while stationed at Montpellier. He migrated to Paris and founded a mental home at Neuilly. Armand Semelaigne joined him, and very soon closer bonds united the director and his assistant.

The works of Casimir Pinel deserving most attention concern general paralysis, the isolation and segregation of mental cases and their treatment, and the question: "Should a medical man tell?"

From Dr. Semelaigne's description of Casimir Pinel's works, he was a man of high principles and great merit—a reformer as regards treatment, certification, and lunacy law. He recognized cases of general paralysis without mental symptoms or only developing some loss of memory in very late stages.

We read with the greatest interest Dr. Semelaigne's observations regarding Pinel's position in the progress of psychiatry as a humanitarian and alleged originator of the non-restraint treatment. For this we must go back to the biography of Joseph Daquin where the matter is discussed (1733–1815). Daquin commenced his career as a psychiatrist in 1787 at the age of 54, when he took over the mental section of the hospital at Chambéry. In 1791 he published his great work under the title of *Philosophie de la folie*, in which he records the results of his adoption, in all cases of mental disorder, of the "moral treatment." He dedicated his book to "Humanity." He justified the title by saying, "He who can see a madman without being touched by his condition, or who sees in him only an object for amusement, is a moral monster." As the book of a doctor of Chambéry, in spite of its philanthropic value, it was almost unknown outside Savoy.

A compatriot, jealous for local celebrities, later became indignant at this neglect, and indulged in the whim that "in his opinion there was more merit, if not more glory, in being Daquin of Chambéry than Pinel of Paris." Local patriotism gave rise to much futile polemics. On Brieuve de Boismont, a lover of paradoxes, giving the matter a moment of benevolent attention, Casimir Pinel replied warmly: "Why keep up these vain discussions? Daquin published his book in 1791. Pinel did not commence service until 1791, but he had already, from 1787 to 1791, published in the *Gazette de Santé* and in the *Médecine éclairée par les sciences physiques* articles in which he extolled kindness towards the insane. He never claimed to be the originator of the humane treatment. He went on to say that Boissier de Sauvages and Retz de Rochefort had recommended kindness to the mentally afflicted, as it was already the rule at the Maisons des Grèves de la Charité. The merit of him who had been called the "liberator of the insane" was not in originating the principle, already in existence at the time, but in

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establishing the reform at Bicêtre and the Salpêtrière. William Tuke had already founded the York Retreat. As philanthropists all three men occupied the same plane. The difference was that Pinel did his part under conditions of great danger, sustained by his courage and great humanity. Daquin recognized this by dedicating to Pinel the second edition of his book.

We would like to see an English edition (publishers please note), for we are sure it would have a ready sale, but Dr. Semelaigne's French is very readable, even to those who have only an elementary knowledge of the language.

In conclusion we offer our old friend and colleague our hearty congratulations, in which many members of our Association will join. J. R. LORD.

Klinische und Anatomische Beiträge zur Pathologie des Gehirns Achter Teil: I. Lichtsinn- und Farbensinnzellen im Gehirn Eine Studie. Von Dr. SALOMON EBERHARD HENSCHEN. Stockholm: Verlag des Verfassers, 1930.

It is certainly unusual for a man over eighty years of age to continue to carry out research work; yet this is true of Prof. Henschen, and this despite his having suffered both a *resectio pylori* and a *fractura colli femoris* not very long ago.

In previous volumes of his well-known text-book he has recorded his researches in cerebral localization (visual and speech centres, etc.), contributions which no worker in this field can afford to ignore. He has already done more than his share of this work—a good deal more.

Most men would, under such conditions, rest on their laurels. Not so Henschen; and it seems as if he intends to continue.

It is the cellular localization of colour-vision in the area striata that is dealt with in the present publication. In 1926 Henschen was struck by the fact that the area striata contained two different types of cells in its fourth layer (lamina granularis interna—the one layer to which is assigned the chief functional importance of primary visual perception.) He naturally became curious as to the functional significance of these different cell-types. Did one type serve colour-vision and the other sensations of light only? In order to settle these questions he carried out anatomical investigations of the area striata in the following apes:

(*a*) Anthropopithecus: Chimpanzee, Orang-Utan.
(*b*) Cercopithecus: *Cercopithecus fuliginosus.*
(*c*) ,, *Rhesus Nemestrinus.*
(*d*) Plathyrrhinæ: *Alouatta nigra, Saimiris sciurea, Pithecia hirsuta.*
(*e*) Hapalidæ: *Hapale.*
(*f*) Prosimiæ:
(1) *Perodicticus Potto* (2 variations).
(2) *Lemur Macaco.*
(3) *Nycticebus tardigradus.*
(4) *Galago.*

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He has tried to calculate the relative numbers of the two different cell-types in the various parts of the area striata in all these animals. He has also examined the external geniculate body in a similar way. Based on this research he claims to have discovered specific colour-vision cells, both in the area striata and in the external geniculate body.

The colour-vision cells of the area striata are described as smaller than the pure light-vision cells. They are round, sometimes with a suggestion of triangular outline; their branches are short and their ramifications simple. The size is about 12–14μ. Their nuclei are of two kinds, oval and round, and Henschen suggests that this corresponds to a functional difference (? vision of different colours).

In his reasoning he takes Max Schultze's teaching of the respective function of cones and rods for granted, and also accepts Schultze's postulate that the night animals lack cones in their retina and have not the gift of colour-vision.*

In the area striata of the night ape, *Perodicticus Potto*, Henschen found only one kind of larger cells, whilst the area striata of the day ape, *Pithecia*, contained both these cells and smaller cells of the description given above. From this Henschen concludes that the smaller cells are colour-vision cells.

Besides this, his most important conclusion, Henschen draws a number of other conclusions, which he recapitulates under twenty headings at the end; amongst these we find the conclusion that the sense of light and the sense of colour have separate paths of conduction (Conclusion XVIII), and that in the apes light cells and colour-vision cells can replace each other (Conclusion XI).

The illustrations (microphotographs) are very good.

On the whole "Lichtsinn- und Farbensinnzellen im Gehirn" is a valuable addition to the author's life work, a worthy continuation of the seven preceding volumes. As motto for the whole work Henschen has put "*Res manent.*"

His conclusions may remain. Possibly they will need modification. But his observations will certainly remain and retain their importance.

G. H. MONRAD-KROHN.

The Process of Human Behaviour. By MANDEL SHERMAN, M.D., Ph.D., and IRENE CASE SHERMAN, Ph.D. Williams & Norgate, Ltd. Price 12*s.* 6*d.*

The authors of this book have made an objective study of human behaviour, recording the observed actions of infants and young children as they noted them, and leaving out of account the doctrines

* A debatable question. In an article in the *Mott Memorial Book*, 1929, Edridge-Green says: "Though I have examined numerous collections I have never been able to find any animal with only rods or only cones, neither have I met anyone who has seen such a retina." In the light of such a statement it is difficult to accept Max Schultze's old teaching any longer. In the present work we find that Henschen himself is obliged to oppose Max Schultze as regards certain night apes.

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of the various schools, such as Behaviourists, Gestaltists, Psychoanalysts, etc., as they consider that these doctrines belong properly to philosophy.

They use the biological method of approach, emphasizing the gradually increasing complexity of the nervous system in going up the evolutionary scale.

They describe the integrative action of the nervous system, which, in man, gives scope for the great number and great complexity of sensori-motor responses.

They have made a comprehensive study of the responses of infants to various stimuli, such as pin-prick, hunger, colic, sudden loss of support, and restriction in the use of the limbs. They made the observation that in very young infants the emotional responses to all these stimuli are undifferentiated at first, and are so much alike that it is very difficult to guess from watching the baby which of these stimuli has been applied. The specificity of the emotional response does not becomes apparent until later. They consider that this is because the responses are characterized by an attempt to adjust to the specific stimulus, and some experience is necessary to give the adjustment form and direction. For example, anger and fear responses are not differentiated by the peculiar organic activity involved, nor by any specific facial expression, but on the basis of differences in the adjustment of the body as a whole in relation to the stimulating conditions.

The authors describe the genesis of the psychoneuroses and of mental disorder as arising from conflict, but, because of their plan of avoiding theory, they fail to give a satisfactory account of why there has been this lack of integration of the personality which allowed the intra-psychic conflict to take place.

The book is interesting and instructive, but is, perhaps, better suited to the educated lay public than to the medical profession.

RUBY T. CARR.

A Survey of the Clinical Examination of the Visceral Nervous System and a Criticism of the Various Tests in General Use, Supported by Own Observations [*En oversikt over den kliniske undersøkelse av det viscerale nervesystem og en kritikk av de forskjellige prøvers pratiske verdi støtlet paa egne undersøkelser*]. *Langfeldt, G.*

In the introduction the author reviews some of the physiological and anatomical facts of the visceral nervous system, and concludes that no absolute antagonism between the functions of the two systems, the parasympathetic and the sympathetic, exists. He gives special attention to atropine, adrenaline and pilocarpine. From the researches on the usefulness of the methods he draws the following conclusions: (1) Subcutaneous tests are worthless; (2) the intravenous adrenaline test often shows no agreement in the various effects; (3) the pilocarpine reaction shows no reciprocal agreement,

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and has therefore no theoretical basis as a test for the parasympathetic system alone; (4) the atropine reaction is also frequently paradoxical.

The practical results obtained in the various disease-groups permit the following conclusions:

(1) The tests have no value for the diagnosis of states which are clinically characterized by increased irritability of the sympathetic and parasympathetic nervous systems.

(2) The tests have no value for the diagnosis of chronic encephalitis.

(3) The tests cannot be used for the diagnosis of dementia præcox, manic-depressive insanity, paranoia, insanity with epilepsy, or mental deficiency.

(4) The tests have no value for the diagnosis of exophthalmic goitre, diabetes mellitus, gastric or duodenal ulcer.

(5) Aschner's reflex has some value for the diagnosis of bradycardia of parasympathetic origin.

(6) The adrenaline blood-pressure curve seems to have a certain value as a guide to calcium therapy in the psychoneuroses.

A. WOHLGEMUTH.

Lehrbuch der Experimentellen Psychologie [*Text-book of Experimental Psychology*]. By J. FRÖBES. Band 2, 3rd and revised edition. Freiburg. i. B.: Herder & Co., 1929.

This is the third revised edition of the second and concluding volume of Prof. Fröbes's well-known text-book. Those who know the first volume or an earlier edition of the second will welcome this new edition, for no one who is acquainted with Prof. Fröbes's clear and systematic exposition, his encyclopædic knowledge and his thoroughly objective treatment of any theme would omit this volume from his shelf. It treats of the cerebral localization of the most elementary psychic processes, speech and its localization, the aphasias (here we miss any reference to Head's work), and amnesia or localization of memories, attention, the ego, memory, intellectual functions, creative imagination, the emotions, the classification of the higher emotions, æsthetics, mimicry and physiognomics, conative processes, morality and religion, social psychology, sleep and dreams, hypnotism and suggestion, mental pathology, and psychotherapy. References to literature are copious in each section and a list of authors is given. A complete index makes this excellent book a handy and reliable work of reference.

A. WOHLGEMUTH.

Por Las Generaciones Futuras. By Dr. JOSE GUILLERMO LEWIS. Panama: Imprenta Nacional, 1929. Pp. 238.

Dr. Lewis is a hospital physician, and a member of the National Assembly of Panama. He is an enthusiast on eugenics. He is

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deeply impressed with the damage to racial interests which results from the transmission of certain diseases; and he believes that compulsory physical examination prior to marriage would obviate much of this damage. Largely owing, we gather, to his efforts, a law was promulgated in Panama, in 1928, which deals with this matter. This law fixes the minimum age for marriage at 14 and 12 years for males and females respectively. It forbids marriage to those who are "not in the full exercise of their reason," and to those who suffer from venereal disease, tuberculosis, leprosy, cancer, epilepsy, etc. Men about to marry must present, fifteen days prior to the marriage, to the district judge, a medical certificate to the effect that they are not suffering from any serious disease of a contagious nature. Such a certificate can be obtained gratuitously from a government medical officer. One rather curious provision exempts those who marry *in articulo mortis* from the obligation to present this certificate. While all would agree with the object which this law has in view, it is obvious that its success or failure will depend partly upon the strictness with which the medical examination is performed, and partly upon the extent to which the law is not evaded by extra-marital intercourse.

A second part of the book deals with the subject of venereal disease. Owing, no doubt, to the formation of the famous canal, Panama contains a very cosmopolitan population. Such a population is always exposed to a special risk of venereal disease, and figures are given which indicate that the disease incidence is very high in parts of Panama. A law has been enacted, establishing a government department to deal with venereal disease, from the preventive and curative aspects. Local regulations may be made by the Alcalde Municipal (mayor). It is suggested that prostitutes should be registered, and periodically examined; none will be allowed to enter the country, and those who are foreign-born will be deported. Cabaret entertainers and such-like persons will be required to undergo a weekly medical examination. Keepers of refreshment houses will have to make a pecuniary deposit (£50 to £100) as a guarantee of the good conduct of their employees, this deposit to be forfeited if any employee is found to be suffering from venereal disease. Official venereal disease clinics will be established. Women suffering from venereal disease must be treated at these clinics, and will not be allowed to receive private treatment.

All of us are united in recognizing the terrible results of venereal disease. Whether the proposed measures are likely to diminish the evil is, however, another question. The experience of such measures in other countries has not been encouraging. The whole subject is complex, and those who have studied it most deeply are least ready to make dogmatic pronouncements. Time will show what happens in Panama. M. HAMBLIN SMITH.

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Part III.—Epitome of Current Literature.

1. Neurology.

Some Observations on Experimentally Produced Convulsions. (*Amer. Journ. of Psych., September*, 1929.) *Pike, F. H., Elsberg, C. A., McCulloch, W. S., and Rizzolo, A.*

Clonic convulsions arise from the motor cortex, when this is intact. Tonic convulsions arise from the lower motor mechanisms, immediately succeeding an injury to the cortical motor mechanisms. After the lapse of sufficient time, clonic responses may be elicited from them; but this is not evidence that clonic convulsions arise from the lower motor mechanisms when the cortical mechanisms are intact. All parts of the motor mechanism act together as one mechanism when the brain is intact. Clonic convulsions in children may arise from the lower motor mechanisms, before the pyramidal fibres have become myelinated. M. Hamblin Smith.

The Significance of Some Variations in the Knee-jerk in Diseases of the Central Nervous System. (*Brain, September*, 1929.) *Pritchard, E. A. B.*

The author describes his method of recording the knee-jerk experimentally on the human subject. He looks on the knee-jerk as a particular example of the general myotatic stretch reflex. In pyramidal tract lesions he found increased facility of the reflex shown by its appearance with both lower initial tension and smaller stimulus than normal. For the same values of tension and stimulus the response is of greater amplitude, has a more nearly perpendicular curve of ascent, invariably a well-marked flat plateau, and the curve of relaxation shows a preliminary convexity or lump, which may be followed by one or more secondary clonic contractions. In hypotonic cases there is increased difficulty in obtaining a response, which may amount to complete absence of the jerk. In some cases, however, quite good responses are obtained. In chorea the jerk, when it appears, shows what has been described as the "sustained knee-jerk of chorea." This may be due either to an extension of the plateau in the form of persistent tonic after effect, or to the secondary addition of either clonic or voluntary contractions. In some cases there was a definite prolongation of the response and secondary contractions. The twitch itself was frequently of the hypotonic variety with no plateau. In extrapyramidal (Parkinsonian) rigidity the curve of contraction obtained was characteristically rounded, with no plateau, no trace of a terminal angle, and

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a delayed descent followed by a very slow return to the previous base-line of resting equilibrium.

G. W. T. H. FLEMING.

Extensor Tonus after Transection of the Brain-Stem at Varying Levels. (*Journ. of Nerv. and Ment. Dis., December*, 1929.) *Ranson, S. W., and Hinsey, J. C.*

Decerebrate rigidity is more marked after transection of the brain-stem at the rostral border of the pons than when the section is made through the caudal border of the mamillary body. It is usually even more marked after anæmic decerebration, by which all of the brain rostral to the pons is rendered functionless.

Cats which, after section of the brain-stem on a plane extending from the rostral border of the superior colliculus to the optic chiasma, are able to walk, show extensor rigidity when supported with the legs pendent. When resting in a crouching position these cats show some increase of tonus in both flexors and extensors. Complete removal of the red nucleus is compatible with the development of the highest grade of decerebrate rigidity. This nucleus inhibits extensor tonus, but is not the only centre concerned in this inhibition. Plasticity is present after transections either above or below the red nucleus and after anæmic decerebrations, but is most easily demonstrated after high transections.

G. W. T. H. FLEMING.

Subacute Combined Degeneration of the Cord; Symptomatology and Effects of Liver Therapy. (*Brain, September*, 1929.) *Ungley, C. C., and Suzman, M. M.*

The authors treated 30 cases of subacute combined degeneration of the cord with liver and found that 17 of them improved. The best results were obtained with 3½–4 lb. of liver a week for 6 to 8 weeks, and 1½–2 lb. a week indefinitely thereafter. Liver extract did not appear to be as effective as liver. The amount of liver required in subacute combined degeneration is greater than in pure pernicious anæmia. The authors found that the response to liver is, as a rule, less rapid and the amount of liver required is greater in cases where there has been marked and prolonged pyramidal involvement and sphincter disturbances, as also where there is active sepsis, such as pyorrhœa or urinary infection. The beneficial effect of liver on the nervous system is a specific phenomenon, and not the result of the maintenance of the red-cell count at a high level or of improvement in the general condition. Ungley and Suzman consider that there is a similarity between subacute combined degeneration and certain deficiency diseases, *i.e.*, pellagra and lathyrism. They think the condition may be a deficiency disease occurring in persons with a certain constitutional diathesis. Since all the signs and symptoms of cord involvement may disappear, it would appear that the degenerative changes in the white matter of the cord are not necessarily of a permanent character.

G. W. T. H. FLEMING.

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The Corpus Callosum and Its Tumours. (*Brain, December*, 1929.) *Ironside, R., and Guttmacher, M.*

The authors, after discussing the history, anatomy and physiology of the corpus callosum, give clinical notes on their series of 14 cases of pure tumours of this region of the brain.

They emphasize certain groups of symptoms, which define more or less the clinical picture of tumour of the corpus callosum.

Hemiplegic weakness, with pyramidal signs, on the opposite side is frequent and early. Apathy, drowsiness and defect of memory are often the first symptoms and are characteristic. Epileptiform convulsions are relatively frequent, and other involuntary movement may occur.

In four out of the fourteen cases the cerebro-spinal fluid was yellow. The general symptoms of cerebral tumour are not by any means prominent; the diagnosis in most of these cases was cerebral vascular disease. In nine out of the fourteen cases papill-œdema was present. G. W. T. H. FLEMING.

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2. Psychology and Psycho-Pathology.

The Respiratory Rhythm in its Relation to the Mechanism of Thought. (*Brain, December*, 1929.) *Golla, F. L., and Antonovitch, S.*

The authors made observations on the respiratory volume and rhythm by means of a plethysmograph enclosing the whole body. They found two types of habitual respiration which are approximately equally distributed among normal subjects of both sexes. The irregular respiratory type was found in subjects with predominantly auditory imagery; the regular type in subjects with predominantly visual imagery. The irregular type became regular when a problem was tackled the solution of which required purely visual images. The regular type was found to be superior to the irregular type in mental arithmetic. The ear for music is more developed in the regular type. General ability was found to be higher in the irregular type. Purely visual dreams are more frequent in the regular type, mixed visual and auditory dream imagery in the irregular type. G. W. T. H. FLEMING.

Advanced Notes; Psychopathic Laboratory Report. (*Medico-Legal Journ., January–February*, 1929.) *Hickson, W. J.*

Delinquency is basically due to heredity, to constitutional mental defect. Psychiatry in the United States is at a very low ebb. Experts must be trained in the psychological rather than the clinical approach to mental disease. In two hours, by the application of suitable psychological tests, more will be learned than by several months' observation. All jurists should have a thorough psychological training. Word-association tests are of great value, and allow us to find mental analogies between the "twilight" mental state of encephalitis lethargica and dementia præcox and the

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epilepsies. The katatonic symptomatology is in direct connection with a lesion of the basal ganglia. In disorders of the basal ganglia it is the same syndromes that are manifested from generation to generation. An extreme case of dementia præcox katatonia, with catalepsy, was sentenced to death at Chicago, in 1922, and was hanged while in an acute condition.

The *Medico-Legal Journal* has just changed hands. Dr. William J. Hickson has assumed the editorship, in succession to Dr. Alfred W. Herzog, who will, however, still contribute to the pages.

M. HAMBLIN SMITH.

Brain and Psyche. (*Journ. of Nerv. and Ment. Dis., October*, 1929.) *Reichardt, M.*

The author divides the concept of Psyche into two natural components, the vital (vegetative-vital and animal-vital) and the mental. He points out the importance of the brain-stem to the vital component. In the brain-stem there is a sleep regulatory apparatus which adjusts the normal periodicity of waking and sleeping.

Changes in the brain-stem may cause pathological states of consciousness, twilight states, delirium, perhaps even hallucinations, depersonalization, states of dissociation and anxiety. Affectivity appears to be related to the central grey matter of the third and fourth ventricles. The author points out that in fatal cases of alcoholic delirium tremens, Korsakov's psychosis and polioencephalitis hæmorrhagica superior of Wernicke, the central grey matter is almost electively affected.

Human mental life is distinguished from animal mental life in being divided with regard to instinctive drives, whereas animal mental life is unified. In man there are conflicts between instinct and interest, between nature and culture, between egoism and altruism, between good and evil; in the animal there is none of this.

The division of the brain into cortex and brain-stem roughly corresponds to a division into reason and emotion, intelligence and character, and mind and soul. G. W. T. H. FLEMING.

Internationale Zeitschrift für Individual-Psychologie, May–June, 1929.

This number contains the following articles:

The Individual-psychological Educational Consulting Centres in Vienna [*Die Individualpsychologischen Erziehungsberatungsstellen in Wien*]. *Seidler, R., and Zilahi, L.*

There appear to be nearly thirty centres in Vienna where advice may be obtained respecting education on Adlerian lines. An account of these is here given.

The Doctor and Educational Consultation [*Arzt und Erziehungsberatung*]. *Knopf, O., and Wexberg, E.*

Evaluation of consulting centres on Adlerian lines, with examples of cases of difficult children.

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Guidance and Indications for the Reference to an Individual-psychological Educational Consulting Centre [*Richtlinien und Indikationen für die Zuweisung an eine Individual-psychologische Erziehungsberatungsstelle*]. *Holub, M., and Zanker, A.*

The Family and Educational Consultation [*Familie und Erziehungsberatung*]. *Friedmann, A.*

Reconciliation with the child is the first thing to be aimed at.

The School and Educational Consultation [*Schule und Erziehungsberatung*]. *Spiel, O., and Birnbaum, F.*

The wide abyss between home education and the education in public educational institutes has to be bridged by intermediate institutions, such as these educational consulting centres.

The Influence of Individual-psychology on Parent Unions [*Der Einfluss der Individualpsychologie auf die Elternvereine*]. *Zerner, T.*

When the revolution opened the road for the long-demanded school reform it became essential to win the parents over as friends to this innovation, and thus the idea of parent-unions arose.

Prophylactic Educational Consultation in the Parent-Unions [*Prophylaktische Erziehungsberatung in den Elternvereinen*]. *Knopf, O.*

Here the parents are taught how to treat their children rationally according to Adler's views.

Technique of Educational Consultation [*Technik der Erziehungsberatung*]. *Adler, Alexandra.*

Bungling in Consultation-technique [*Kunstfehler in der Beratungstechnik*]. *Müller, A.*

Some advice addressed to consultants to avoid mistakes.

A Consultation [*Eine Beratung*]. *Adler, Alfred.*

A verbatim record by Adler on case sent to him for his opinion, and Adler's interviews with the patient's mother or the patient himself. A. WOHLGEMUTH.

Internationale Zeitschrift für Individual-Psychologie, July–August, 1929.

This number contains the following papers:

Exaggeration of One's Own Importance [*Übertreibung der eignen Wichtigkeit*]. *Adler, A.*

Adler gives here an outline of the treatment he would follow in the case of an eleven years old schoolgirl, who by her behaviour whilst preparing for school in the morning upsets the whole household.

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On the Theory of Individual Psychology [*Zur Theorie der Individualpsychologie*]. *Kronfeld, A.*

This is a rejoinder to a criticism of the foundations of Adler's individual psychology by Hans Kunz. In explaining his position to theoretical criticism the author says that the practical side of the work is the essential and important one, and that theoretical criticism only touches it peripherally. The goal of individual psychology is by unmasking man's life-fiction to make him real and genuine, and to lead him, by doing this, back to the community. With reference to the theory of the inferiority-feeling he discusses first organic inferiority and then the structure of the inferiority-feeling. Proceeding to the "community-feeling" Kronfeld says that this is a descriptive fact of the individual psychic experience; it is a comprehensive concept for the psychological foundation of ethical norms, and becomes the psychological correlate of "practical reason" in Kant's sense. The theory of personality is similarly discussed.

Analysis of Psychoanalysis [*Analyse der Psychoanalyse*]. *Rühle-Gerstel, A.*

The author discusses a book by Charles E. Maylan, *Freuds tragischer Komplex: Eine Analyse der Psychoanalyse* (*Freud's Tragic Complex: An Analysis of Psycho-analysis*), which he welcomes and describes as magnificent and cruel; magnificent on account of its daring, and cruel because he forces himself on the analyst in his old age. The Œdipus complex in the theory has not been solved, because Freud himself got stuck fast in the Œdipus complex. As Freud has not submitted to analysis Maylan analyses him by his writings, and finds that Freud's life-line comprises sexual curiosity, repression by the father, and flight into the medical vocation. The last and fourth point, the awakening, the liberating act, Freud has not yet reached.

Everyday Nervousness [*Die Nervosität des Alltags*]. *Jacoby, H.*

General everyday nervousness is nothing but the manifestation of the tendency to eliminate others so as to arrive at the top, which tendency is produced by a feeling of inferiority or insecurity.

Individual Psychology and Gynæcology [*Individualpsychologie und Gynäkologie*]. *Knopf, O.*

The author treats of hæmorrhage, vaginismus, leucorrhœa, frigidity, etc., of psychogenic origin, and illustrates these by several case-histories of her own. The inferiority complex is the cause in all.

On the Education of the Infant [*Zur Erziehung des Säuglings*]. *Zilahi, A.*

As, according to individual-psychological views, the mechanization of the mode of life is finished by the age of five, it is necessary

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to begin the education of the infant as early as possible. According to Adler, man's ideal, his goal, is formed in the first months of his life. The author then proceeds to discuss the education of the infant, but her advice does not differ materially from that generally given.

Problems of Behaviour in Children under Three [*Probleme des Verhaltens bei Kindern unter drei Jahren*]. *Fries, M. E.*

This is a translation of a paper which appeared in the *Archives for Pediatrics*, New York, November, 1928. The paper gives several case-histories of children. A. WOHLGEMUTH.

Internationale Zeitschrift für Individual Psychologie. Herausgegeben von Dr. Alfred Adler, September–October, 1929.

This number contains the following papers:

From the Latest Literature on Organ-inferiority [*Aus der neusten Literatur über Organminderwertigkeit*]. *Holub, A.*

This is an enumeration of papers on the above subject that have appeared recently.

On the Sense of Duty [*Über Pflichtgefühl*]. *Wexberg, E.*

This is an interesting essay on duty or pedagogy, incidentally severely criticizing psycho-analysis.

M. Ernest Seillière and Adler's "Individual-psychology" [*M. Ernest Seillière et "l'Individualpsychologie" adlerienne*]. *Brachfeld, O.*

In this note, which is written in French, on Ernest Seillière's book *Le néoromantisme en Allemagne: Psychoanalyse ou Psychologie impérialiste allemande*, Brachfeld severely criticizes Seillière, and points out the misconceptions obtaining in France of Adler's teaching.

Hellmut von Gerlach. Freund, H.

A biographical appreciation from an Adlerian point of view of the well-known editor of the *Welt am Montag*.

Rejoinder to A. Kronfeld's "On the Theory of Individual-psychology" [*Erwiderung auf A. Kronfeld's "Zur Theorie der Individualpsychologie"*]. *Kunz, H.*

The Community-idea as the Goal of the Newer Philosophy [*Der Gemeinschaftsgedanke als Zielpunkt der neueren Philosophie*]. *Pick-Seewart, R.*

A philosophical essay. The *Weltanschauung* of the near future will probably be a religious socialism. From religion it will take the idea of immortality, and from socialism that of class-warfare.

A. WOHLGEMUTH.

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Internationale Zeitschrift für Individual-Psychologie. November–December, 1929.

This number contains the following articles:

Simulation or Neurosis? [*Simulation oder Neurose?*]. *Schwabach, E. C.*

Short extracts from the autobiography of the French poet André Gide describing his simulations of nervous attacks.

Psychic Characteristics of Schizophrenia in Twilight States and Manic-depressive Insanity [*Psychische Charakteristika der Schizophrenie bei Dämmerzuständen und manisch-depressivem Irresein*]. *From personal experiences by L. R.*

A description by a medical patient, a woman, of her experience during her illness, which had been diagnosed as dementia præcox. The editor adds: "Although we cannot consider the account as incontestable, we consider the essential points as valuable and stimulating."

Three Cases from Practice [*Drei Fälle aus der Praxis*]. *Holub, M.*

Three case-histories of children, 13, 8 and 3 years respectively.

My Eldest Boy: Reported by a Mother [*Mein Ältester: Bericht einer Mutter*]. *Communicated by Spiel, O.*

The Idea of Educational Cooperation [*Die Idee der Erziehungsgemeinschaft*]. *Redl, F.*

An interesting paper on cooperation between teachers and parents in the education of children.

The Juvenile Court [*Jugendgericht*]. *Hückel-Rohm.*

A description of a number of cases before a juvenile court, with criticism of the treatment of the accused.

The Problem of the Ugly Woman [*Zum Problem der hässlichen Frau*]. *Bauermeister, H.*

A character study of Adalbert Stifter's novel *Brigitta*.

Romanticism and Individual-psychology [*Romantik und Individualpsychologie*]. *Schulhof, H.*

An attempt to bring romanticism into harmony with the Adlerian school.

Customer and Salesman [*Käufer und Verkäufer*]. *Unger, M.*

A short and superficial study of the psychology of customer and salesman from the Adlerian point of view.

A. WOHLGEMUTH.

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Mind, vol. xxxviii, No. 152, *October*, 1929.

This number of *Mind* contains the following papers, which are entirely of philosophical interest:

Professor Eddington's Gifford Lectures. Braithwaite, R. B.
General Propositions. Langford, C. H.
The Basis of Knowledge in Descartes. Stout, A. K.
Critical Realism and Substance. Sellars, R. W.
Cosmology in Plato's Thought. Boodin, J. E.

A. WOHLGEMUTH.

The Effect of Direct Stimulation of the Blind Spot. (*Amer. Journ. of Psych., xli, No.* 3, *July*, 1929, *pp.* 345–397.) *Helson, H.*

Since the discovery of the blind spot some 260 years ago it has engaged the attention of investigators of various branches of science. These investigations, which are for the present only qualitative, were undertaken to determine exactly the facts, or to decide, if possible, between various theories. The experiments are well and carefully planned, and the results leave no doubt that stimuli of $\frac{1}{100}$ the total area of the disc were effective, whilst scattering was ruled out of court. Three hypotheses are possible to explain the phenomena observed: (*a*) That the phenomena are due to adjoining retinal elements. (*b*) That there are end-organs in the optic nerve-head which are responsible for the phenomena. (*c*) That the optic nerve-fibres are responding directly to light. A great number of results of these experiments rule out hypothesis (*a*), *e.g.*, the least perceptible colour seen in the blind spot is different from the faintest colour seen on the edges; two colours may be seen simultaneously within the blind spot; when an annulus of colour surrounds the blind spot and another is exposed inside, neither affects the other; often a black space is seen between them, etc. Hypothesis (*c*) is likewise inadmissible, for the local sign of the sensation ought to be that of the end-organs of the affected fibres of the optic nerve, and this is not the case. Hypothesis (*b*), that there are end-organs in the optic disc, is, therefore, the one that recommends itself most to the author, and he calls upon histologists to investigate again this region of the eye. A lengthy historical and critical survey precedes the experimental part of the paper. A. WOHLGEMUTH.

An Experimental Study of Four Cases of Colour-blindness. (*Amer. Journ. of Psych., xli, No.* 3, *July*, 1929, *pp.* 398–411.) *Snyder, M. A.*

These experiments were carried out with four colour-blind and two normal subjects who were students of psychology. The tests employed were the following: (1) Sorting of coloured splints; (2) Holmgren wool test; (3) colour equation test; (4) Nagel card test—sorting of colour-cards and grey cards. The first subject was found to be totally colour-blind. Evidences of rod vision are: (1) His point of distinct vision is not at the fovea; (2) his vision improves at twilight; (3) his red and yellow are darker whilst his blue and

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green are lighter than normal, which is typical of twilight vision. His brightness discrimination is below the average and the effect of contrast much less. Negative after-images are rarely obtained. The other three cases, although very interesting, are less so than the first one. A. WOHLGEMUTH.

The Auditory Sensitivity of Guinea-pigs. (*Amer. Journ. of Psych., xli, No.* 3, *July*, 1929, *pp.* 412–421.) *Upton, M.*

In these experiments use was made of the very irregular breathing of guinea-pigs and of the conditioned reflex; but why this latter it is difficult to gather from the text or from the respiratory tracings. It was found that under the given experimental conditions the breathing of the guinea-pigs was very irregular, as revealed by the respiratory tracings. On 50 successive presentations of a tone (600 d.v.'s) no change in the tracing could be observed. The tone was then presented together with an electric shock. After more than 250 tone-shock presentations a peculiar smoothing-out of the breathing-curve occurred whilst the tone lasted. This is called the "lullaby effect." The author writes: "Although the 'lullaby effect' was regarded as clear evidence that the animals were responding to the tones, it seemed that in time some response should occur in place of the shock when it was left out of the presentation. This expectation was fulfilled, and after about the 500th tone-shock presentation what may be considered the true conditioned response appeared." However, the specimen tracing given does not show anything of the sort. With the end of the "lullaby effect" the tracing shows no deeper respiration cycle than the tracings of respiration before the training of the animals. A. WOHLGEMUTH.

A Mechanical Explanation of the Law of Effect. (*Amer. Journ. of Psych., xli, No.* 3, *July*, 1929, *pp.* 422–431.) *Stephens, J. M.*

A description of an ingeniously constructed apparatus, consisting of electro-magnets and automatic switches, is given, by means of which it is claimed Watson's behaviouristic theory is demonstrated; its function is also said to be in harmony with Thorndike's and with Carr's conceptions of learning.

The real phenomenon of learning, says the author, is considered to lie in the fact that one stimulus will produce several different responses, of which one will be selected to follow the stimulus almost invariably. It is held that this altering and selective force is associated with the effect of the response. A mechanistic law of learning reads as follows: A connection which results in one effect (probably biologically useful) will not be stamped out, and may be stamped in. A connection failing to produce this type of effect, or producing another type (probably biologically harmful), will tend to be stamped out. Things are, however, seldom as simple as the author assumes, and his attempts to bring the "conditioned reflex" within the purview of his exposition are anything but convincing. A. WOHLGEMUTH.

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Learning the Relation of Opposition. (*Amer. Journ. of Psych, xli, No. 3, July, 1929, pp. 432–441.*) *Kreezer, G., and Dallenbach, K. M.*

Most children of the social status of the group examined learn the meaning of opposition without special instruction by the end of their eighth year or the beginning of the ninth; others learn it with instruction suddenly, with the acquisition of "insight"; once learnt they do not forget it. The trial-and-error theories of learning are unable to account for "insightful" learning. The existence of this type of learning shows how totally inadequate to the problem of learning the trial-and-error theories are.

A. WOHLGEMUTH.

The Journal of Social Psychology, vol. i, No. 1, February, 1930.

This is the first number of a new American periodical appearing quarterly. It is edited by Prof. John Dewey, of Columbia University, and Prof. Carl Murchison, of Clark University. A new and commendable feature is that each paper is followed by a German and a French summary. The following papers are contained in this first number:

A Neurotic Inventory. Thurstone, L. L., and Thurstone, T. G.

The "personality inventory" is a *questionnaire* of some 225 questions to be filled up by freshmen of the University of Chicago.

The Development of Men of Science. Poffenberger, A. T.

This is a statistical study of the factors which influence the development of men of science.

The Physiological Basis of Neurosis and Dreams. Burrow, Trigant.

A "societal" interpretation of the sensori-motor reactions reflected in insanity and crime.

Recent Improvements in Devices for Rating Character. May, M. A., and Hartshorn, H.

The Contribution of Ten Chronicles-of-America Photoplays to Seventh-grade History Teaching. Tilton, J. W., and Knowlton, D. C.

A Quantitative Comparison of Rational Responses of Negro and White College Students. Graham, J.

About 36 to 37% of the tested negro-students reach or surpass the median of the intelligence tests of the tested white students.

An Objectivity-subjectivity Ratio for Scales of Measurement. Adams, H. F.

Why do We Weep? Lund, F. H.

A. WOHLGEMUTH.

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3. Clinical Psychiatry.

A Study of the Functional Psychoses in Childhood. (*Amer. Journ. of Psychiat., September*, 1929.) *Kasanin, J., and Kaufman, M. R.*

The antecedent personality determines the type of reaction in the psychotic individual. But it is just those earlier character traits that are difficult to obtain. The study of psychoses in children might be expected to throw light on the problem. Among 6,000 admissions to the Boston Psychopathic Hospital there were 160 children under 16 years of age—92 boys and 68 girls. Of these only 65 cases were diagnosed as psychotic, schizophrenia being the most frequent form. The physical factors, including menstruation, were rarely significant. The various problems of sex played a very important part. Environmental stress was of definite ætiological significance. No definite statement can be made as to the parent-child relationship. The content of the psychosis gave very limited knowledge of the pre-psychotic problems of the children concerned.

M. Hamblin Smith.

The Relation of Endocrinopathic States to the Conduct Disorders of Children. (*Amer. Journ. of Psychiat., September*, 1929.) *Lurie, L. A.*

The endocrine glands are the dominant factors in determining bodily structure. The correlation between structure and function includes both mental and physiological functioning. Disturbances in glandular function may lead to abnormal conduct reactions directly or indirectly by causing the development of abnormal mental attitudes, which render the making of social adjustments difficult. No study of a child who presents a conduct problem is complete without a thorough investigation of the endocrine glands.

M. Hamblin Smith.

The Relative Importance of Hereditary Factors in Constitutional and Organic Psychoses. (*Journ. of Nerv. and Ment. Dis., January*, 1930.) *Farr, C. B., Schwartz, L. A., and Smith L. H.*

The authors considered a group of seventy-four paretics and a group of seventy-six manic-depressives. They divided the hereditary taints into direct atavistic, indirect and collateral. The percentage of primary psychotic tainting in paresis is equal to or slightly higher than in the manic-depressive group. Suicide is more frequent in manic-depressive families. Idiosyncratic personalities were found in greater numbers in the families of the manic-depressives. The tendency to nervous diseases and apoplectic attacks was more common in the paretic group.

Alcoholism was found to be frequent in both psychoses. From the standpoint of direct heredity there is little difference between the two conditions.

The authors think that if the individual having paresis had not

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met the spirochæte he might eventually have developed some other psychosis due to social and environmental influences.

G. W. T. H. FLEMING.

The Rôle of Infection in the Etiology of Tics. (*Arch. of Neur. and Psychiat., December*, 1929.) *Selling, L.*

The author has found definite evidence of sinus infection in every case of tic he has examined, with one exception. The antra were most affected. The author considers that these are cases of a toxic encephalitis, and that early treatment of the primary focus of infection will lead more or less to recovery, depending on the amount of damage that has been done.

G. W. T. H. FLEMING.

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4. Pathology.

A Contribution to the Study of the Colloido-Chemical Reaction of Takata-Ara in the Cerebro-spinal Fluid. (*Il Cervello, August*, 1929.) *Revello, M.*

The author concludes that the reaction of Takata-Ara, though a simple reaction and particularly sensitive in general paralysis, is not pathognomonic of this disease. Positive results are obtained in nervous diseases which are neither clinically nor biologically proved to be of syphilitic origin. G. W. T. H. FLEMING.

Basal Metabolism and Emotional States. (*Journ. of Nerv. and Ment. Dis., December*, 1929.) *Henry, G. W.*

The author investigated the basal metabolism of 292 cases of psychoses, male and female, most of which were acute cases, but still capable of cooperating in the work. There is a definite relationship between basal metabolic processes and emotional states regardless of the type of personality disorder. Elated, over-active and over-talkative states are accompanied by acceleration of basal metabolic processes. Depressed, under-active and under-talkative states are accompanied by retardation of basal metabolic processes. Apprehensive, tense and agitated states usually imply an acceleration of basal metabolic processes, but this may be counteracted in some cases in which the feeling of depression is intense. Apathetic states are accompanied by a retardation in basal metabolic processes which is not as great as that associated with feelings of depression. The author thinks that probably some of the normal variations noted are due to different emotional states. The basal metabolic rate may be altered to a pathological degree with no apparent factor other than an unusually intense emotional state, and therefore the interpretation of the rate in any given case, regardless of the type of illness, requires the consideration of the prevailing emotional state of the individual tested. G. W. T. H. FLEMING.

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Basal Metabolism and Gastro-intestinal Findings in Epileptic Patients, with a Note on Treatment. (*Journ. of Nerv. and Ment. Dis., September*, 1929.) *Davis, T. K.*

In a series of 45 cases of idiopathic epilepsy at the Cornell Clinic, Davis found duodenal disturbances in 31% and duodenal stasis in 29%. When the author investigated the basal metabolism he found it lower than normal, the lowest being ·21%. For treatment the patients were placed on the low residue diet worked out by Foster Kennedy. This gave very good results in some cases. X-ray examinations showed the sella turcica to be within normal limits, but the author gave pituitary (whole gland) and found improvement in some of his cases. He also gave small doses of luminal without observing any ill-effects. G. W. T. H. FLEMING.

On the Nature of Two Forms of Neuroglia. (*Journ. of Nerv. and Ment. Dis., October*, 1929.) *Taft, A. E., and Ludlum, S. de W.*

The authors conclude that the supporting substance of the central nervous system can be shown by means of the ultra-microscope to consist of a finely granular (colloidal) substance capable of very delicate adjustment in swelling or shrinking by alteration in its water content. The so-called fibrous glia, found at the periphery of the brain and cord, about blood-vessels and in areas of tissue degeneration, presents all the characteristics of fibrin, from which it is not differentiated by selective staining.

G. W. T. H. FLEMING.

(1) *A Study of a Case of Cervical Glioma.* (*Brain, December*, 1929.) *Slater, J. K., and Reynolds, F. E.*

(2) *A Study of the Pathology of a Case of Glioma Cerebri.* (*Brain, December*, 1929.) *Reynolds, F. E.*

(1) The authors present a study of a glioma of the spinal cord extending from the third cervical to the first thoracic segment. This growth had extended along certain of the posterior nerve-roots and had invaded the neighbouring pia-arachnoid spaces, producing nodular swellings. The growth consisted of a syncytium—there was no differentiation into individual cell elements. Gold and silver impregnation methods showed that the structure associated with the large-celled glioma of Stroebe is that of a syncytium.

(2) Reynolds presents a study of a large glioma cerebri which began in the central portion of the brain and extended widely into both cerebral hemispheres. The older portion of the growth consisted of astrocytes which had attained a high degree of specialization, whereas the actively extending and recently formed portions were composed of a syncytium and of cells having as their prototype the spongioblasts of the developing neural tube. At some distance from the neoplastic tissue there were small groups of pre-existing astrocytes, which were proliferating. Necrosis in the neoplasm was due probably to its outgrowing the blood-supply, and to the accumulation in the tissue of the waste products of neoplastic metabolism. G. W. T. H. FLEMING.

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A Study of the Histopathology of Tabes Dorsalis, with Special Reference to Richter's Theory of its Pathogenesis. (*Brain, September*, 1929.) *Stern, R. O.*

The author examined 9 cases of pure tabes, 3 cases of taboparesis, and 8 cases of general paralysis. His control material consisted of 27 cases taken at random from a variety of common diseases of the nervous system.

His results are entirely against Richter's theory. The "specific granulation-tissue" which Richter mentions, Stern found in 22 out of his 27 control cases. The degeneration which occurs in the intramedullary part of the posterior root may be present as early as three months after the onset of symptoms, so that Richter's theory of slow strangulation of the posterior roots by granulation tissue is untenable. Hassin's theory as recently advanced is no more acceptable. In normal cases with similar arachnoidal infiltrations there is no degeneration of the posterior columns. Stern makes the suggestion that in tabes the aorta may act as a focus from which spirochætes may exert their toxic effects on the central nervous system, basing this theory on the work of Orr and Rows.

G. W. T. H. Fleming.

Clinical, Malariological and Parasitological Observations on Inoculation Malaria. (*Riv. di pat. Nerv. e Ment., September–October*, 1929.) *Mari, A.*

The author found that the clinical symptomatology of induced malaria is just the same as the natural disease. The irregularity of the febrile course is due to the method of inoculation, not to the mere fact of passage from man to man. There is not enough evidence to justify the existence of an inherent or acquired immunity to malaria. Inoculation malaria, whether benign, tertian or quartan, does not relapse if sufficient quinine is given. The somatic manifestations and the variation in the blood picture are the same in induced malaria as in the natural disease. There is no modification in the morphology or life-cycle of the malarial parasite in its many passages from patient to patient. The production of gametocytes is the same as in the natural disease. Inoculation malaria can be spread by wandering mosquitoes.

G. W. T. H. Fleming.

Modifications of the Serological Aspects and of the Blood Picture after Malarial and Specific Therapy in General Paralysis. (*Il Cervello, December*, 1929.) *Benvenuti, M.*

The marked modification of the serological aspects and of the blood-picture in general paralysis following malarial therapy shows the advantage of this therapeutic method, and ought really to be interpreted as a heightening, more or less intense, of vital processes which the malaria provokes and in which the whole organism takes part. The blood findings and some of the serological findings seem to favour the theory of Gerstmann, according to which, by the intercurrent malarial infection, the relation between the

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spirochæte and the body receives a distinct blow, causing the paralysis process to react as a kind of delayed lues. Besides the early and progressive decrease in albumin, in lymphocytes, and in globulin in the spinal fluid, the appearance during or at the end of the post-malarial cure, of a negative Wassermann in the fluid, the transformation of the gum-mastic curve from a paralytic type to a luetic type, and a notable increase of lymphocytes in the blood, give one ground to hope that in cases in which there is already improvement in the clinical picture the remission will be lasting.

G. W. T. H. Fleming.

Paresis Treated with Malaria; The Relations between Clinical, Serologic and Histologic Observations, with Special Reference to Permeability Determinations. (*Arch. of Neur. and Psychiat., December*, 1929.) *Malamud, W., and Wilson, R. B.*

The authors studied fifty-four cases of neuro-syphilis in which the patients were treated with tertian malaria. Examinations of the blood and spinal fluid at regular intervals show that there exists a definite correlation between the behaviour of the index of permeability for bromide and the clinical course. It was found that (1) in practically all cases of paresis in which treatment is not given there is an increased permeability for bromide (index below 2·80); (2) in cases in which malaria treatment is given there may or may not be a further increase of permeability after the cessation of the fever; (3) following this, in cases that subsequently show improvement there is a gradual fall in permeability (rise of index to normal limits of 2·8 to 3·2); and (4) in cases which do not show improvement or in which the condition becomes worse there is no such decrease, and there may be an even greater increase of permeability. These fluctuations in the permeability index generally precede the changes in the clinical pictures.

Histological studies of cases of paresis in persons whose permeability index was determined shortly before death showed that there was a definite relation between the index and the amount of iron in the walls of the cerebral vessels.

G. W. T. H. Fleming.

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5. Treatment.

Standards in Occupational Therapy. (*Occupational Therapy, August*, 1929.) *Kidner, T. B.*

Occupational therapy has been introduced into many hospitals merely because it is fashionable. The products of such therapy are only incidental, and are not the aim of treatment. A fully trained and experienced organizer is essential; to put this work in charge of an attendant who happens to possess an elementary knowledge of handicraft is worse than useless. M. Hamblin Smith.

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The Importance of Eye Health in Occupational Therapy. (*Occupational Therapy, August*, 1929.) *Hathaway, Winifred.*

If a blind person happens to have unusual acuteness of hearing, this is not due to any law of "compensation," but because, having been deprived of one faculty, he has been obliged to train others to bear an extra responsibility. Idleness, not blindness, is the curse of the blind. Three things are really necessary to see—the eyes, the light, and the brain. Walls and ceilings of wards should be coloured in ivory or light buff. Hyperopes have far less concentration than myopes, and tend to be far more irritable. Weaving is specially unsuitable for astigmatic cases. If typewriting is selected as an occupation for patients with eye disease, it must be taught by the touch system. M. HAMBLIN SMITH.

Neurosyphilitic Criminal Insane: Criteria of Cure. (*Medico-Legal Journ., March–April*, 1929.) *Richmond, F. C.*

Should the neurosyphilitic criminal insane patient be dismissed from treatment when the maximum of clinical improvement has been obtained; or should he be detained and treated until the cerebro-spinal fluid reaction is negative? The author inclines to the latter view. There should be administration of at least 100 doses (3·0 grm.) of tryparsamide; and the patient should be treated for at least one year after the first negative cerebro-spinal fluid reaction, and until a second negative cerebro-spinal fluid reaction is obtained.

M. HAMBLIN SMITH.

Psiquiatria y Neurologia. (*Revista de Criminologia, Psiquiatria y Medicina Legal, Buenos Aires, Ano. xvi, No. 94, Julio–Agosto de* 1929.) *Claude, H., and Dimolesco, A.*

The authors discuss the results of malaria therapy in general paralysis and quote the following figures:

Bunker and Kirby (New York): In 118 cases of general paralysis treated with malaria 20% died of pneumonia, hæmorrhages and pulmonary tuberculosis following the "shocks."

Ferraro and Fang (Washington), in 120 cases of general paralysis treated with malaria obtained 60 complete and partial remissions with 20 deaths.

Bunker in 90 cases of general paralysis treated with malaria, noted a diminution of the albumen and lymphocytes in the cerebro-spinal fluid.

B. Wilson, in 38 cases of general paralysis found that between the fourth and fifteenth days after the malarial "shocks" a diminution took place in the mastic reaction, the lymphocytes and the albumen in the cerebro-spinal fluid. The fluid tended to become normal in three to five months, but between the sixth and ninth month the reactions became positive again.

He also observed that the colloidal and Bordet-Wassermann reactions were less intense immediately after the malaria treatment.

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He considers, however, that malaria treatment helps in an energetic way to diminish the inflammatory processes in the cortex and meninges. J. R. BEITH ROBB.

La Malarioterapia en la Paralisis General Progressiva. (*Revista de Criminologia, Psiquiatria y Medicina Legal, Buenos Aires, Ano xvi, No.* 94, *Julio–Agosto de* 1929.) *Balado, L. E., and Esteves, J. V. d'O.*

Balado and Esteves state that at first they were not favourably impressed with the idea of treating general paralysis with malaria. Their early results were so unfortunate that they temporarily ceased using this method. They suspected their technique, but soon they discovered that other workers were also getting discouraging results.

They considered, however, that further investigation was necessary, as in the words of Dr. G. Bosch, "to contemplate with arms folded a patient with general paralysis, is to enter into a compact with Death."

They believed that exaggerated claims for and against malaria therapy had been made, but on reviewing their work since 1925 they would classify the results of malarial treatment in general paralysis as follows—

Remissions:

Class 1.—Patients appeared cured both mentally and neurologically.
,, 2.—Apparent mental cure with great neurological improvement.
,, 3.—Great mental improvement with little neurological change.
,, 4.—Little mental and great neurological improvement.
,, 5.—Slight mental and neurological improvement.
,, 6.—No change.

Percentages are not given with the above classification.

In the opinion of the authors, although malaria may be the cause of the remissions in the course of the disease, it is not a cure for general paralysis, as the patient is still suffering from syphilis. They consider, therefore, that in addition antisyphilitic treatment is imperative. This they carry out while the patient is having malaria, the whole treatment being modified according to the patient's physical condition.

In support of their opinion they quote the following authorities:

Fribourg-Blanc: Malaria therapy only—46% remitted, of which 22% died later. Malaria plus anti-syphilitic drugs—66% remitted, of which 6·7% died later.

Claude, Targowla, Cenac and Prieur: Malaria causes the remission, but the patient still suffers from syphilis.

Demay, Prugnaud and Sicard consider that anti-syphilitic drugs must be used in addition to malaria.

Balado and Esteves use the ordinary preparations of bismuth and mercury, but arsenical preparations, such as sodium stovarsol (1 gr. dose), had to be abandoned owing to optic and liver complications. J. R. BEITH ROBB.

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6. Sociology.

Eight Years of Clinical and Educational Work in the Community. (*Amer. Journ. of Psychiat., September*, 1929.) *Jackson, J. A., and Pike, H. V.*

Every mental hospital should assume some responsibility for the development of a mental hygiene programme in its district. The success of extra-hospital clinical activities will depend upon cooperation between the staff of the clinic and the social agencies with which this staff has to work; the immediate supervision of such activities should be in the hands of one man. The study of the child of pre-school age should be stressed, in order to correct faulty habit formations. A large percentage of juvenile delinquents are mental defectives or psychopathic personalities. Mental clinics provide the best method of supervision for patients out on trial.

M. HAMBLIN SMITH.

The History of Human Sterilization in the United States. (*Medico-Legal Journ., March–April*, 1929.) *Landman, J. H.*

The hereditary factor in mental defect has been exaggerated. The burden of proof of the necessity for sterilization lies upon the advocates of that method. Twenty-three States of the Union have enacted sterilization laws. In some of these States the laws have been repealed, or have fallen into disuse, and in most of the other States comparatively few sterilizations have been performed.

M. HAMBLIN SMITH.

Marriage and Propagation among Criminals. (*Medico-Legal Journ., March–April*, 1929.) *Erickson, M. H.*

This investigation was conducted in Wisconsin, during 1924–29. The figures comprise 3,643 cases of white males of 21 years of age and over. An I.Q. of ·75was taken as the upper limit of mental deficiency, and an I.Q. of ·60 as the upper limit of low-grade deficiency. There were 23% of high-grade and 6% of low-grade defectives in the total of cases—proportions much higher than are found in the general population. No great disproportion was found between the married and the unmarried in the criminal class; but compared with the general population there was a decidedly lower incidence of marriage among criminals of all types. The percentage of married among the defective criminals was about the same as that among the non-defective criminals. The incidence of divorce in the criminals was much higher than in the general population; it must, however, be remembered that conviction for felony is a ground upon which the other party may obtain a divorce in Wisconsin and in other States. Among the married criminals the average number of children was 2·18, the figure being rather higher in the case of the defective group. The figure for the size of family did not differ materially from that found among male college graduates.

M. HAMBLIN SMITH.

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Part IV.—Notes and News.

THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

Quarterly Meeting.

The usual Quarterly Meeting of the Association was held, by the courtesy of Dr. Alan McDougall and the Visiting Committee, on Tuesday, February 4, 1930, at the David Lewis Colony, Warford, near Alderley Edge, Cheshire, under the Presidency of Nathan Raw, *C.M.G.*, M.D., F.R.C.S.E., F.R.S.E.

The Council met the same morning, and the Standing and other Committees of the Association on the previous day.

(1) The Minutes.

The minutes of the meeting held on November 6, 1929, were read, approved and signed by the President.

(2) Obituary.

The President said that he had to draw attention to the deaths of two members, both of whom had lived and died in Ireland. He would call upon Dr. M. J. Nolan to say a few words regarding them.

Dr. Christopher Costello.

Dr. M. J. Nolan (Downpatrick) said that Dr. Costello died as far back as May 27, 1929, and at the time of his death was an Assistant Medical Officer at Portrane Mental Hospital, Donabate, Dublin. His death was mentioned at their previous meeting, but no particulars were then known. Dr. Costello qualified from the University College, Dublin, in 1916, and immediately joined the R.A.M.C. and served his country well for the next two years, when he was invalided out. He became a member of the Association on joining the medical staff at Grangegorman. The Irish Division mourned his death at its July meeting, and sent a message of sympathy to the bereaved relatives.

Dr. Bagenal Crosbie Harvey.

Dr. Harvey had been a member of the Association since 1886, and at his death was Medical Superintendent of Clonmel District Mental Hospital, where he was formerly an Assistant Medical Officer. He received his medical education in Dublin and at Edinburgh, and was greatly respected in the Irish Division, which learned of his death with deep regret. Under his kindly governance Clonmel Mental Hospital greatly prospered and many improvements were effected.

The Secretary was instructed to send letters of sympathy to the bereaved families. Those present stood in silence out of respect for the deceased members.

(3) Report of the Council.

The President said that many important matters had come before the Council, and since Dr. Lord had been associated with many of these he would call upon him to give a *résumé* of them.

Dr. J. R. Lord (Horton) said that the matters to which the President had referred were chiefly Parliamentary and educational.

The Mental Treatment Bill, 1929.

A sub-committee which the Parliamentary Committee had appointed to report on this Bill and to watch its passage through Parliament, had issued a report

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which, with a few emendations, had been approved by the Committee and later by the Council. The full text of the Report would be published in the next issue of the *Journal of Mental Science* (*vide* p. 324). This sub-committee had been authorized to take any action it thought fit to impress upon Parliament the views of the Association as laid down in its evidence before the Royal Commission, and in the subsequent report of the Parliamentary Committee on the Report of that Commission.

The Sub-Committee had throughout been in close touch with a Committee of the British Medical Association dealing with the same subject.

He was glad to state that the views of the two bodies were in substantial agreement and the report had been ratified at a joint meeting. The speaker thought that this was the first time in history that the medical profession had presented a united front on any important problem.

The Revision of the Regulations for the Training and Examination of Candidates for the Certificate in Mental Nursing, and of the Rules for the Conduct of this Examination.

The last time the Association in general meeting assembled heard of this matter was at the annual meeting in July last, when the Educational Committee intimated that it was about to consider a report from the Questionnaire Sub-Committee which had had under consideration a number of helpful suggestions and some criticisms emanating from the Mental Nursing Consultative Committee, and the recognized training schools as contained in a report by the speaker.

At the November meeting of the Educational Committee, the recommendations, slightly amended, of the Questionnaire Sub-Committee were adopted, and their incorporation in the Regulations and Rules for the Nursing Certificate ordered to be prepared in draft for discussion at this meeting.

The draft, with a few amendments, had been approved by both Educational Committee and Council. The occasion had been thought opportune to submit the text of the Regulations and of the Rules to a thorough revision.

The main lines of this revision had been—Regulations: (*a*) The avoidance of repetition in the text of the definition of terms; (*b*) the deletion of repetitions and redundancies; (*c*) a revised numbering of paragraphs for ready reference; (*d*) the avoidance of terms indicating gender; (*e*) the defining of terms peculiar to the revised mental deficiency nursing examinations. Rules: (*a*) A numbering of the rules to make references possible; (*b*) the deletion of repetitions and redundancies; (*c*) a re-arrangement of the directions to candidates at the head of examination papers on a more orderly plan; (*d*) the "List of Subjects suitable for the Practical Examination" was now contained in an Appendix.

Time would not permit him to describe in detail the changes in training and examination procedure sanctioned, but copies of the revised documents were at the disposal of members interested.

The chief changes in regard to training were the issue of (*a*) a list of equipment to be provided for training and examination purposes, (*b*) a card recording the satisfactory performance of certain essential nursing procedures, (*c*) evidence of at least six months' actual nursing of recent, acute and physically sick patients, and a three months' period of night-nursing.

The system of examination had been modernized, with due regard to the convenience of the training schools, the special nature of the examination, and the prime importance of the character traits of the candidates. The conduct of the written examination remained much the same, but, for the oral and practical examination, areas with local secretaries would be brought into being. The old medical coadjutors became "Chief Examiners" appointed by the Educational Committee, on the nomination of the local secretaries. The examinations would be open to inspection by inspectors appointed by the Educational Committee and who would be members of the Association.

There was much yet to be done before the revised regulations and rules could be put into force.

Increase in the Number of Examiners.

It had been thought necessary to increase the number of examiners for the written examinations owing to the steady increase in the number of candidates.

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The State Registration of Mental Nurses.

The Council had considered the Report of its Special Committee on the State Registration of Mental Nurses and had unanimously adopted it. It was an important document, and he thought it should be published in the next issue of the Journal for the information of members and of the general public (*vide* 327).

He, the speaker, thought the Committee's recommendation was very sound and would commend itself to the great majority of members.

(4) Election of Ordinary Members.

The President nominated two members as scrutineers for the ballot. The following candidates were unanimously elected ordinary members of the Association:

Rees, John Rawlings, M.A., M.D.Camb., D.P.H., Deputy Director, The Tavistock Square Clinic, 14, Wimpole Street, W. 1.
Proposed by Drs. J. R. Lord, J. Ernest Nicole and R. D. Gillespie.

Simpson, Thomas Edward Norman, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, The City Mental Hospital, Fishponds, Bristol.
Proposed by Drs. E. Barton White, Herbert Smith and W. Starkey.

Bristowe, Hubert C., M.D.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C., Hon. Major *R.A.M.C.*, Medical Officer, Yatton Hall Home for Feeble-Minded Children, Wrington, Somerset.
Proposed by Sir Hubert Bond, and Drs. John McGregor and E. Barton White.

Barber, Leonard, M.B., B.S.Durh., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., D.P.M., Assistant Medical Officer, The City Mental Hospital, Fishponds, Bristol.
Proposed by Drs. E. Barton White, Herbert Smith and W. Starkey.

Lewis, Edmund Oliver, M.A.Camb., D.Sc.Lond., M.R.C.S., L.R.C.P.Lond., Inspector, Board of Control; 29, Highbury New Park, London, N. 5.
Proposed by Sir Hubert Bond, and Drs. A. Rotherham and A. Edward Evans.

Tyars, Mary Elizabeth, B.Sc., M.B., B.S.Lond., D.P.M., Assistant Medical Officer, Horton Mental Hospital, Epsom, Surrey.
Proposed by Drs. M. E. Franklin, Dorothy P. Hytch and J. Ernest Nicole.

Fenwick, Philip Cuthbert Collingwood, L.M.S.S.A., Assistant Medical Officer, East Sussex Mental Hospital, Hellingly.
Proposed by Drs. Norcliffe Roberts, E. L. Hopkins and P. Banbury.

Cooper, Hugh Astley, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, West Park Mental Hospital, Epsom.
Proposed by Drs. Norcliffe Roberts, E. L. Hopkins and P. Banbury.

Armstrong, Robert William, B.Sc., M.D., B.Ch.Belf., D.P.M., Officer in Charge of Encephalitis Lethargica Cases to L.C.C. Mental Hospitals; West Park Mental Hospital, Epsom, Surrey.
Proposed by Drs. Norcliffe Roberts, E. L. Hopkins and P. Banbury.

Ashby, William Ross, B.A., M.B., B.Ch.Camb., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Leavesden Mental Hospital, Abbots Langley, Watford.
Proposed by Drs. R. M. Stewart, G. de M. Rudolf and R. Worth.

Sharpe, John Smith, M.B., Ch.B.Glasg., Assistant Medical Officer (Biochemist), County Mental Hospital, Stafford.
Proposed by Drs. B. H. Shaw, K. K. Drury and R. Worth.

Wilson, Henry Leonard, M.B., M.R.C.P.Lond., D.P.M., Assistant Physician, The Retreat, York.
Proposed by Drs. Isabel G. H. Wilson, Bedford Pierce and R. Worth.

(5) Paper.—"**The Why of Conduct,**" by Dr. Alan McDougall.

It may be futile to try to answer the question, Why do people do as they do ?, but the attempt seems worth making, for if we could trace back the numerous "urges" that reduce conduct to one original fundamental urge we could draw the genealogical tree of the Urge Family, and put psychology on a solid basis.

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We require some half-dozen different theories, and this Association is the body peculiarly fitted to produce them. For it is an Association of practical and experienced men, whose daily work brings them into close contact with many people; and it has many thoughtful members who are not yet so fully occupied with the cares of administration as to have no leisure for consecutive thinking. Without hindering either the clinical or the laboratory research work of our hospitals, might not a few of the younger members of the Association be encouraged to interest themselves in praxiology?

As an illustration of the science of praxiology I will, for the sake of brevity, dogmatically mention a notion that to me seems necessary and sufficient to explain why people do as they do.

If we observe our fellow creatures we see them to be essentially unselfish. Now, unselfishness is a very difficult thing to explain. We may attempt to overcome the difficulty by saying that a man is not an individual but a patriarch, and that he is patriotically unselfish in order to be patriarchally selfish. And certainly a large part of conduct can be explained by patriarchism. But I do not think it sufficient to explain all conduct. To do that we must go back in imagination. Imagine the moment when, putting it, perhaps, allegorically, the Good Lord God formed a morsel of protoplasm and told it so to function as would tend to ensure there always being some protoplasm somewhere on this earth of ours. Putting it otherwise: The fundamental property of protoplasm is its necessity so to function as will tend to ensure there being protoplasm. At the moment of its coming into existence that first protoplasm (call it *Z*) was in great danger of death from local catastrophe. To try to end that risk *Z* divided itself into separate bits, and these bits re-divided themselves, and by continuation of the process *Z* came to be a hollow sphere of protoplasm, eight thousand miles in diameter, that covers almost the whole earth with, as it were, a garment. Parts of it are trees, parts of it are microbes, parts are elephants, parts are fish, and parts of it are members of the Royal Medico-Psychological Association. Every part is essentially unselfish; it is striving (unknowingly) to ensure the eternal life not of itself, but of *Z*. This growth in bulk of *Z* involved the building up of much organic matter from inorganic matter. It was obviously economical that any protoplasm that died should be ingested, digested, and made protoplasm again. It was, also, to *Z*'s advantage, and therefore moral, that the stronger protoplasm should feed upon the less vigorous protoplasm. As *Z* has no central nervous system, no intelligence department, the question of relative merit could be settled only by trial. Hence arose rivalry—an urge that explains many acts of conduct. Rivalry led to the formation of alliances, also the cause of many acts of conduct.

As it is *Z* and not any particular bit of *Z* that is to survive, it is necessary in the absence of a central intelligence department that every protoplasmic cell should be ardent to do things for something outside and bigger than its particular self. Call that quality egoism. It has an enormous importance as an urge. For instance, we know from experience that the art of management of an institution is the art of giving to everyone around us an outlet for his egoism that will be useful to the institution.

The egoistic urge is so active that did it not alternate with another urge—egotism, the urge for personal comfort—a creature would work itself to death more quickly than would best promote *Z*'s welfare. So we pass from labour to refreshment, and from refreshment to labour, that profit to *Z* may be the result.

Here I stop. A full exposition of the *Z* notion would take weeks to give. Three remarks in conclusion: (1) The *Z* notion goes harmoniously with all religious systems, Christian, Pantheistic, Atheistic. (2) As he who causes two blades of grass to grow where only one grew before increases *Z*, sex plays a smaller part in deciding conduct than they would like to believe in Vienna. (3) The *Z* notion has the property without which no theory can find acceptance this year; it can be stated mathematically; for if you ask the why of any act of conduct—vegetable, animal or human—the notion replies: *Z* is why.

Discussion.

The President said that Dr. McDougall's exposition was a marvel of clarity.

Dr. T. B. Hyslop (London) said: A year ago I was very ill, and during that time I spent my energies in trying to learn something about the subject we have been teaching for forty years. In coming here to-day I feel I have to start all over again.

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I should like to have a conversation with Dr. McDougall extending over, say, a year or two. (Laughter.) I must congratulate him on breaking new ground. He has expressed some very novel ideas, which I should like to discuss with him; they simply teem with thoughtful suggestions. He opens out a very wide field for cultivation, and deals with evolution from the primordial standpoint.

Dr. J. R. LORD (Horton): I also should like to add a word of congratulation and thanks for the paper we have just heard. As an effort of memory—for it was spoken without referring to written text—it was a surprising feat. It must have taken a good deal of clear thinking to put it in the concise form in which it was expressed, and it confirms what I said at lunch about the genius of the McDougall family.

I quite agree that self-preservation or "survival value" is the first urge of life or we would not be here to-day.

I put my theory of life in much fewer words still. It is as follows: One unit of protoplasm knows. Two units know better. Three units know better still, and so on. At last there comes an aggregate of units which not only knows, but knows that it knows. This is the only fact one can be dead certain about. As for the rest, it is best accepted with a grain of salt.

There would be no object at all in self-preservation if it were not for the purpose of knowing and the ultimate higher purpose of consciously knowing. Man, at least, thus acquires a capacity to live, and not merely to respond self-protectingly to "situations," "environment" and what not, to which, in these days, glib references are so common.

(6) PAPER.—"**Pineal Cysts, with Report of Two Cases,**" by Dr. RICHARD HANDLEY (*vide* p. 250).

DISCUSSION.

The PRESIDENT: You have heard a very clear description of two very interesting cases, and I should be glad to have a discussion.

Dr. J. BLAIR (Prestwich) said he had not taken particular notice of the pineal because it was frequently removed with the meninges. He had always thought the body involuted and ceased to function at puberty, and was of no use in the adult. He had received a report of cases of cerebral tumours in which sleep disturbances were the pre-eminent feature.

Dr. J. R. LORD (Horton) said that, as he had sat there listening to this interesting paper, his thoughts had gone back to thirty-two years ago when, as a young man, he had read a similar paper before the Pathological Society of London. Sims Woodhead thought much more of it than he had ever done. He, the speaker, on that occasion described minutely, from a study of fifty cases in mental hospitals, the normal structure of the pineal gland and its normal degeneration. He was surprised to hear that the theory of the pineal gland as a vestige of the pineal eye of some cyclostomes was not now held.

If he remembered aright, he did, in his paper, describe the glandular tissue and its breaking down to cystic formations with brain-sand on ceasing to function actively. Like all other vestigial structure, it was prone to develop cysts, teratomata, etc.

Dr. WILKINS asked how internal hydrocephalus was produced with a patent aqueduct.

A MEMBER asked if cysts occurred in men, and was there any relationship between cyst-formation and the climacteric?

Dr. HANDLEY, in reply, said that his paper avoided opinions and gave only facts, but his answers now would be only opinions. Nearly all pineal cysts were removed with the meninges. The sleep disturbance was, perhaps, due to interference with the hypothetical centre for sleep in the floor of the midbrain.

He was much interested in what Dr. Lord had related, and would like to read his paper if a copy were available.

The cysts were not actually in the pineal parenchyma but in the neuroglial trabeculæ, and it would be more accurate to describe the parietal eye of cyclostomes as having no relation to the human pineal parenchyma; it had, however, some relation to structures in the pineal region. The onset of internal hydrocephalus was probably due to pressure on the first part of the great vein of Galen. Dandy had shown how this occurred in dogs with a patent aqueduct. Pineal

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cysts did occur in males, but they appeared to be commoner in females, and an increase in their size might occur with the climacteric.

The PRESIDENT: I am sure the Association is grateful to Dr. Handley for having read such an interesting paper.

(7) PAPER: "**A Brief Résumé of the Types of Insanity commonly met with in India, with Full Description of 'Indian Hemp Insanity, Peculiar to the Country,'**" by Major D. E. DHUNJIBHOY, M.B., B.S., I.M.S. (*vide* p. 254).

The PRESIDENT: Before Major Dhunjibhoy begins I should like, on behalf of the Association, to give him a very hearty welcome here, and to say how very pleased we are that he has come all the way from Calcutta to read this interesting paper. Major Dhunjibhoy has charge of a very fine mental hospital, one that will compare with anything we have here, and I am sure his psychiatric experience will be of great value to us.

DISCUSSION.

Dr. DONALD ROSS opened the discussion by complimenting Major Dhunjibhoy on an interesting paper, and spoke of some of his own experiences while serving with an Indian cavalry division in the war. It included some of the finest units of the Indian Army, and it was therefore hardly surprising that what is popularly termed "shell shock" was practically non-existent among them. He had, however, met with several very interesting cases of genuine mental derangement and it might interest his listeners to hear that the one and only case of "cold feet" and definite malingering he had encountered among them, even after some very severe fighting, was also the only man he had ever met of the name of Gunga Din.

He claimed to have had some slight experience of this subject, having on many occasions visited Egypt and Morocco, where hashish was used. He asked whether Dr. Dhunjibhoy has made any special tests, and whether there was any marked symptoms of alteration in the contour of the eyes.

Dr. E. J. FITZGERALD asked if it was only Indians who had never left India that did not get G.P.I. Had the Major ever seen a case of G.P.I. in a native Indian? In view of the known prevalence of syphilis in India, what was the result of the Wassermann and the gold-sol reactions in the cerebro-spinal fluid of admissions to native Indian hospitals.

He had under his care at present Europeans who had both syphilis and malaria in India, and were now among the worst cases of G.P.I.

There was a popular opinion that G.P.I. was rare in Ireland (except perhaps in Dublin and Belfast), and that the native Celts who had not mixed with foreigners did not develop syphilis or G.P.I. He believed that the alleged comparative absence of venereal disease in Ireland would not bear laboratory investigation.

He asked how they managed to run Indian Mental Hospitals where the caste system was in vogue?

Dr. T. B. HYSLOP (London): May I say how very greatly I have enjoyed the paper of Major Dhunjibhoy. It takes me back to a date earlier than 1898, which Dr. Lord has mentioned this afternoon. When I was at school I was very much interested in etymology, and I remember the word "assassin" was derived from hashish, and associated with crimes and premeditated murders. In Egypt especially it was found that a great many deliberate murders were committed by men who had placed themselves under the influence of hemp.

Dr. Dove Cormac (Macclesfield) pointed out that there were 300 million people in India, and they had only accommodation for about 10,000 mental patients. He desired to know how they managed.

Dr. DOUGLAS MCRAE (Ayr) said that in a great many of the large asylums thirty years ago they used the green mixture. He was at Wakefield for some three years, where it was a regular course of treatment for patients who were extremely excited or agitated. Many of these cases developed hallucinations. It was a very dirty mixture and very tiresome to make up, and he had abolished the use of it. No other sedative they employed produced hallucinations.

Dr. M. J. NOLAN (Downpatrick): In confirmation of the last speaker I may say the name of "green mixture" was introduced to Ireland by a medical officer who

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came from Wakefield. It was a noxious compound and it fell into disuse. He could not quite agree that it was necessary to go out of Ireland to contract syphilis. He remembered a great many years ago that general paralysis was recognized in at least one city that the syphilis was contracted locally.

Dr. McRae: There may be very little general paralysis in Ireland amongst the Irish, but there are quite a number of Irishmen suffering from general paralysis in this country.

Dr. J. R. Lord (Horton) said that in his early days he had given green mixture (Indian hemp), but without much effect. The drug lost its effects if kept for long. Only fresh specimens were really active. He was interested in Major Dhunjibhoy's recommendation that the drug should be stopped at once, and that psychotherapy was useful. In drug addiction three methods of withdrawing the drug were advocated: Rapid, gradual, and something "in between," giving, as a rule, some substitutes in the meantime to comfort the patient. Underlying the drug habit there was usually a much bigger problem. He remembered the case of a woman who had been admitted to his hospital several times suffering from alcoholic hallucinations. He was much concerned as to the reason for her repeated relapses into alcoholism. She was a quiet, well-behaved, single woman, living with a decent married man whose wife had years before he met the patient deserted him, and he did not know whether or not his wife was living. The neighbours thought they were married. He, the speaker, concluded that this complex from time to time brought on a fear that the true facts would come to light. Ultimately the man did receive the news that his wife was dead, but delayed marriage. He saw the husband and told him to marry the woman, which he did, and she had kept well since and had never returned to alcohol. Treating the patient psychologically in this case cured the drug habit, and he thought more would be cured if investigated from that point of view. He thought that underlying all drug-taking was a definite psychological cause. It was again a case of treating the person rather than the habit.

Major Dhunjibhoy, replying, said that in his army experience he had found very little insanity in the Indian Army; what he met was mainly malingering to get out of the service. India was not as backward as one might imagine. They had fully equipped laboratories and good routine, and some research work was done. They did not observe any caste or creed in the mental hospitals of India. Did they do so they would want about 200 different kitchens. Syphilis was very common in the ordinary population, but not general paralysis.

The President: I am sure we have had a very instructive and pleasant afternoon and we are grateful to those who have read the papers to us.

The meeting closed after fixing the date of the next quarterly meeting as May 22, in order to allow those going to the International Congress on Mental Hygiene at Washington time to return before the meeting.

The Visitation.

The enthusiasm for building colonies for sane epileptics seems to have died out, and one wondered at it on visiting the comfortable and well-appointed villas of this colony and talking with the well-cared for, happy and contented residents. Not a few of the patients had found a home there for many years, usefully occupied and for the most part had enjoyed good health both mentally and physically, the occurrence of fits having been no detriment to this. Demissions by death or by certification and transfer to mental institutions had been rare, while a large number, especially of the younger patients, had been enabled to resume life in the outside world. The really good work the colony did (and economically too) impressed itself on the visitors, and gave rise to the question we have just mentioned. One learned that there was always a waiting list of epileptics desiring admission, and that there were practically never any vacant beds. So there was no dearth of those needing the accommodation.

Yet this had been in existence since 1904, *i.e.*, for over a quarter of a century, almost the latest epileptic colony of any size in Great Britain.

The reason for the success of the Colony was voiced by a speaker at luncheon, namely, treatment of the epileptic as an individual rather than of his fits. We could only conclude that the reason why colonies for epileptics had not extended was that this same fact had not yet been widely and sufficiently appreciated.

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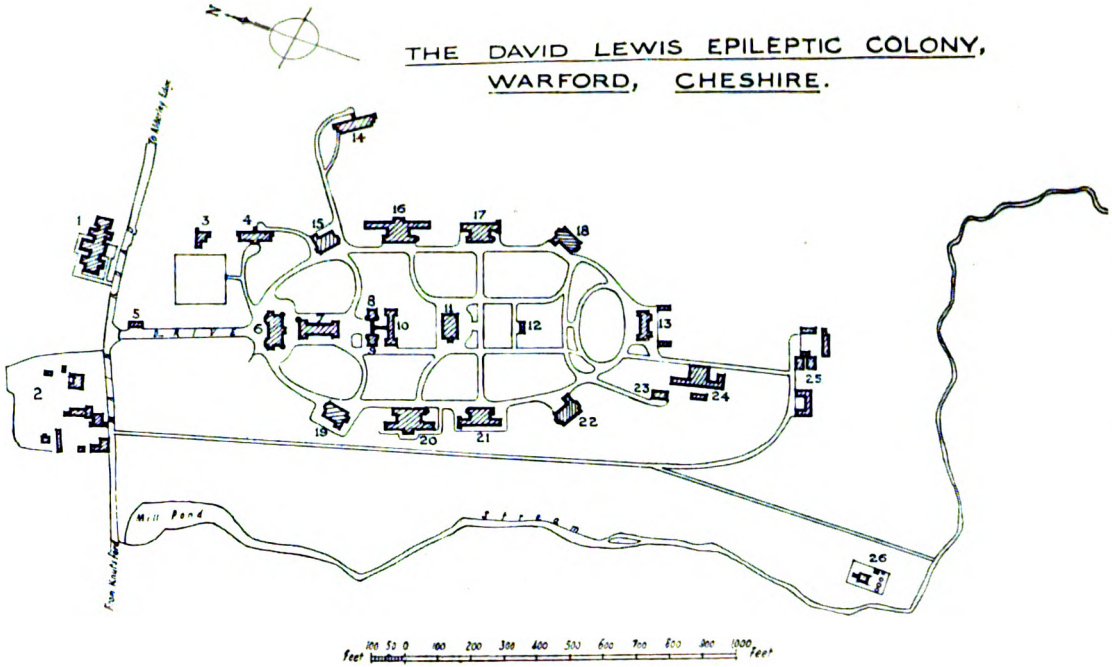
THE DAVID LEWIS EPILEPTIC COLONY, WARFORD, CHESHIRE.



References.

1. Home for 32 girls.
2. ,, 20 boys.
3. Assistant medical officer.
4. Nurses' home.
5. Two cottages.
6. Administration.
7. Recreation hall.
8. Observation.
9. Sewing room.
10. Hospital.
11. Kitchen and bakery.
12. Greenhouses.
13. Home and school.
14. Nurses' home.
15. Home for 24 women.
16. ,, 54 ,,
17. ,, 24 ,,
18. ,, 20 ,,
19. ,, 24 men.
20. ,, 42 ,,
21. ,, 24 ,,
22. ,, 20 ,,
23. Two cottages.
24. Laundry, boilers, work-
25. Farm. shops.
26. Septic tanks.

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A few historical facts in this relation will not be out of place here. The Bethel Colony at Bielefeld, in Hanover, the pioneer of all epileptic colonies, was opened in 1869. Between that date and 1891 four others came into being in Germany. The first to be established in America was the Ohio Hospital, in 1893; the Craig Colony followed in 1896. The Maghull Colony of Liverpool opened its doors to patients in 1889; the Bridge of Weir Colony in Scotland in 1891; Meath Home, Godalming, in 1892, and the Chalfont Colony in 1894. It was about this time that the unhappy circumstances of the sane epileptic aroused the very active sympathy of some members of the Manchester and Chorlton Joint Asylums Committee, and Dr. J. M. Rhodes and Alderman A. McDougall (the latter the father of our host), were deputed to visit the colony institutions of Germany, Belgium and France. Their report was published in book form in 1897.

Two colonies seem to have been the practical outcome—The David Lewis Colony, founded by the David Lewis Fund, in 1904, and the Langho Colony in 1906, by the Manchester and Chorlton Unions, the former for sane epileptics only, and the latter for both sane and insane epileptics in separate divisions.

The movement in the meanwhile had spread to London, and the L.C.C. Ewell Colony for insane epileptics was opened in 1903. Sir John McDougall took a great interest in this development.

Something of the same kind was projected by the Leicester Board of Guardians, which seems to have come to nothing. The M.A.B., in 1916, established the Edmonton Colony for 355 male sane epileptics.

And that was the whole story, so it seemed to us, as we called it to mind on our tour round the David Lewis Colony. The following is a brief description of the Colony:

Seven villas, each accommodating 30 to 40 patients, are arranged on an oval plan, those for men on one side and for women on the other. At one end is the administrative building, with quarters for the chief officers and for some of the subordinate staff. At the other end is situated the school—an important feature of treatment. Beyond the school is the farm and recreation ground. The tastefully decorated and commodious hall and church are situated near the centre. The area enclosed by the villas is occupied chiefly by flower and kitchen gardens. Visitors were much interested in the large poultry farm which flanks the main colony, and will not soon forget the devotion to her job of the lady in charge. The whole colony accommodates about 400 patients.

The new home for girls (Colthurst House School) was much admired. Each of the dormitories is dedicated to some great painter and adorned with copies of his art.

The home for boys, an old farm-house, is historical as being the original "Woodley" of Mrs. Gaskell's novel *Cranford*. It is also the "Hope Farm" of *Cousin Phyllis*. This gifted writer lived there for some time. It has several fine Jacobean fire-places, and still attached to it are its ancient farm buildings.

J. R. Lord.

The Luncheon.

Members and guests were hospitably entertained to lunch at the Colony. At its conclusion the Chairman of the House Committee and Honorary Treasurer of the Colony (J. P. Pattinson, Esq.) uttered some words of welcome. He said: My first duty is to apologize for the absence of our President, Lord Stanley of Alderley, who is in London and is a very busy man, and also for the absence of our Chairman, Sir Arthur Haworth; they both assured me that they would have been here had it been at all possible. The pleasant duty, therefore, devolves upon me to offer you a very hearty welcome, and to say that we consider it a compliment to the Colony that you should be holding your meeting here to-day. We all appreciate what a valuable adjunct to medicine the science of psychology has become and how it is entering more and more into the treatment of disease. In the David Lewis Colony we have always practised the psychological treatment of disease, if I may so call it, rather than the treatment of epilepsy by means of drugs. The latter treatment by itself is not, in our opinion, and I believe in the opinion of our doctors, a satisfactory way of treating epileptics. We endeavour to help them by putting them in pleasant surroundings in this pleasant country of Cheshire where they are free from worry, so as to benefit both mind and body.

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I have no doubt that you have made yourselves pretty well acquainted with the Colony during the time you have been here. During the last year we have had an average of 373 colonists, and we have a long waiting-list, in spite of the fact that we are constantly extending our accommodation. All the houses are full with the exception of the house for girls, where we have vacancies for 15 to 20.

I hope you will have a very pleasant visit, and that the meeting which is to follow will be a success. (Applause.)

The PRESIDENT: On behalf of the Royal Medico-Psychological Association and those present particularly I wish to thank the Chairman, Mr. Pattinson, for his very nice welcome to this Colony. The David Lewis Colony is a very well-known and very highly thought-of institution, and we have always considered it a model. It is a fine example of what can be done by voluntary effort. The whole of the great colony was established by the philanthropic act of Mr. David Lewis. I should also like to pay a tribute to those members of the Committee who give their time for the benefit of those who are patients here. That fact fills us all with admiration. As is well known, the treatment in this Colony is of a very high character and the results are excellent. It was a very great pleasure to us when we received the kind invitation of your highly esteemed Medical Director, Dr. Alan McDougall, to hold our meeting here. (Hear, hear.) We accepted it with the greatest pleasure because we knew we should see a very fine place and have a very good time. I speak feelingly, having myself been an inmate of this institution, though it was only for one night, but certainly a very good one. (Laughter.) I offer you our grateful thanks for your kindly reception, and express the hope that at some future time we may pay another visit.

I cannot sit down without expressing a word of high admiration for the fine work Dr. McDougall has done here. He rather astonished me last night, when we were having an informal discussion about the treatment of epileptics, by his original and successful methods of treatment. It does show that both males and females can be treated here, not only with great success, but with perfect safety by a loyal and efficient staff of female nurses. (Applause.)

Mr. CHARLES W. RAILTON said: I thank you very heartily for the very kind words you have said, and endorse what Mr. Pattinson has said, as to the pleasure it has given us to have the opportunity of entertaining so many distinguished members of the medical profession. It is a very welcome opportunity for us to arrange that you should see something of this Colony. The Colony started about twenty-six years ago, and at that time we had beds for about 200 colonists. Since then the place has grown steadily. It has always been progressive. We provide the means of living a happy, and in many cases, as far as one can see, a useful life. We are very pleased indeed to be in the position of being your hosts to-day.

Dr. J. R. LORD: I have very great pleasure in proposing the health of our host, Dr. Alan McDougall. This visit is of peculiar interest to me personally. The McDougall family has played a very important part in my psychiatrical development. One of my earliest papers was devoted to the care of epileptics, and in the preparation of that paper I was considerably helped and inspired by Dr. Alan McDougall's father, the late Alderman A. McDougall. Our host's uncle, Sir John McDougall, was for many years a power in the L.C.C., and he took me up and helped me in my work and ambition throughout my career right up to the time of his death.

My psychological development I owe largely to the writings of a cousin of our host, Prof. William McDougall. As regards our host, though I did not meet him till Sunday, I must say his conversation, hospitality, sympathy and encouragement has led me to hold him in high regard and admiration. (Applause.) I believe there are other members of the family who have helped and are striving to forward social advancement.

It is not surprising that the Colony has had to be extended. The epileptics we have met here appear to me to be different to the epileptics we ordinarily meet in mental hospitals, where the treatment is mainly directed to the fits rather than to the individual. This is all to the credit of Dr. Alan McDougall. He has done a magnificent work in this respect and incidentally demonstrated the truth of what I have contended since 1899. I regard him as the pioneer in this country of the best methods of care and treatment of the epileptic.

I have very great pleasure in inviting you to drink to the health and continued prosperity of Dr. Alan McDougall. (Cheers.)

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Dr. ALAN MCDOUGALL, briefly replying, thanked the members for their courtesy and Dr. Lord for his appreciative remarks.

IRISH DIVISION.

THE SPRING QUARTERLY MEETING of the Irish Division was held at the District Mental Hospital, Ballinasloe, on Thursday, April 3, 1930, by the kind invitation of the Committee of Management and Dr. J. Mills, Medical Superintendent.

Dr. R. R. Leeper (Divisional Chairman) presided and seventeen others members were present.

Apologies for unavoidable absence were received from Dr. J. C. Martin, Dr. S. J. Graham, Dr. A. Sheridan and Dr. B. F. Honan.

The minutes of the last meeting were read, approved, and signed by the Chairman.

On a ballot being taken the following candidates were unanimously elected ordinary members of the Association:

N. M. FITZGERALD, M.B., B.Ch., B.A.O.N.U.I., Grangegorman Mental Hospital, Dublin.

Proposed by Drs. R. R. Leeper, J. O'Conor Donelan and Stanley Blake.

JOHN VINCENT KELLY, M.B., B.Ch.N.U.I., D.P.M., Assistant Medical Officer, District Mental Hospital, Castlebar.

Proposed by Drs. P. Moran, A. Sheridan and D. L. Kelly.

JAMES SCOTT, M.B., B.Ch.N.U.I., Assistant Medical Officer, District Mental Hospital, Carlow.

Proposed by Drs. P. Moran, T. Greene and D. L. Kelly.

The meeting then proceeded to the election of the officers of the Division for the year 1930–31, and, on a ballot being taken, the following were declared elected:

Chairman of the Division: Dr. Richard R. Leeper.

Representative Members of Council: Dr. Richard R. Leeper, Dr. Laurence Gavin.

Secretary of the Division: Dr. R. Thompson.

Dr. Leeper and Dr. J. O'C. Donelan were nominated Examiners for the Association's Certificate in Psychological Medicine for the ensuing year.

Correspondence was then read from Dr. J. R. Lord *re* the formation of an Irish Sub-Committee of the Research and Clinical Committee. The matter was fully discussed, and it was decided, on the motion of Dr. Nolan, seconded by Dr. Mills, to adopt Dr. Lord's suggestion, and to approve an Irish Research and Clinical Sub-Committee.

The *personnel* of this Sub-Committee was then nominated as follows:

Dr. M. J. Nolan.	Dr. P. Moran.
Dr. J. O'C. Donelan.	Dr. N. Graham.
Dr. J. Mills.	Dr. B. F. Honan.
Dr. D. L. Kelly.	Dr. John Fitzgerald.
Dr. R. R. Leeper.	Dr. R. Thompson.
Lt.-Col. Dawson.	

Dr. Moran was nominated Secretary to the Committee.

Dr. LEEPER then introduced the question of the travelling expenses of the Secretary of the Division in attending the General Meetings of the Association. He stated that he had made repeated efforts to get these expenses defrayed by the local authorities—as is the case with the Scottish and some of the English secretaries—but had been unsuccessful. He then put a resolution to the meeting, which he suggested should be forwarded to the Local Government Departments of the Irish Free State and Northern Ireland. The resolution was discussed and various amendments suggested, and the Secretary was instructed to forward the resolution, as amended, to the Governments of the Free State and Northern Ireland.

The Summer Meeting was fixed for July, day and place to be decided upon later.

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DIVISIONAL CLINICAL MEETINGS.

District Mental Hospital, Ballinasloe.

A Clinical Meeting was held at the above hospital on April 3, 1930. Eighteen members were present and Dr. R. R. Leeper occupied the chair.

Dr. MILLS demonstrated four cases of traumatic insanity. In two of these the trauma was psychic—the result of sudden and terrible emotional experiences—while in the other two the insanity resulted from physical trauma—violent blows to the head. In one of the latter, ordinary major epilepsy had resulted from the injury. Dr. Mills, in reviewing these cases, emphasized the *rôle* of trauma—either psychical or physical—in the production of insanity, and stated that a certain group of cases appeared to be directly attributable to this trauma, no other causative factor being apparent.

The members had an opportunity of examining these cases.

PAPER.—"Treatment and its Limitations in the Public Mental Hospitals of the Irish Free State," by P. MORAN, M.B., D.P.M.

The communication I am venturing to submit to you is rather of a negative nature and is intended to provoke discussion rather than to enunciate original views. I do not feel capable and do not propose to make a critical dissertation on modern advances in psychiatry, but rather to take stock of the therapeutic facilities in our public mental hospitals in the light of recognized principles of treatment. In the Free State roughly 95% of the patients under treatment for mental disorder are in the public mental hospitals; so for all practical purposes the standard of treatment available is the standard that these provide.

Very few in this country can afford the luxury of treatment in a private mental hospital.

It is now a recognized axiom that the treatment of mental disorder should approximate as nearly to the treatment of physical ailments as is consistent with the indispensable special safeguards. The foundation of treatment in all cases of mental illness is careful attention to the basic principles of physical and mental hygiene. We seek the cause or causes of the malady, endeavour to remove them, and adopt the therapeutic measures likely to promote physical recuperation and mental readjustment.

To attain this end the essential requirements are:

(*a*) Suitable hospital buildings and equipment.
(*b*) Competent and sufficient medical staff.
(*c*) Well-trained nursing staff.
(*d*) A liberal hospital dietary.
(*e*) Enlightened governing body.

I propose to examine how we are at present served under each of these headings:

(*a*) *Buildings and equipment.*—Our hospital buildings are totally inadequate and completely out-of-date. Most of our public mental hospitals are approaching their centenary; some are even older. They were built at a time when treatment as such was not considered, and detention was the only object. This idea is obvious in the construction of the buildings. Insanity was regarded as a depressing nuisance, to be hidden away in suitably depressing prison-like surroundings. It was almost regarded as a crime, and the victim as a social outcast. The value of fresh air and sunlight was little understood, and did not find a place in the architectural schemes. We are now left with structures which, in the light of our modern knowledge, are architectural atrocities. The exterior of many of the buildings is pleasing and imposing, but internally they present in the main the appearance of gaols rather than hospitals. The best aspects of the buildings are occupied by corridors; the windows so constructed as to provide the minimum of ventilation, generally open only at the top, and the sanitary equipment—mainly tacked on as an after-thought—is in most cases inadequate, unsuitable and badly placed. The original buildings were designed to accommodate about one-third of the present numbers, and the casual additions have, as a rule, been ill-designed, and stuck on in such a way as to make the original atrocities more atrocious. At

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present all our buildings are grossly overcrowded. The overcrowding is all the more serious on account of the unhygienic buildings, and is most prejudicial to mental and physical recovery. It prevents proper isolation and classification, its irritating effect on patients is obvious, and it renders impossible the development of a proper hospital atmosphere. Recreation, indoor amusements and games and the development of occupational therapy are all hampered by lack of space. Open-air verandahs, so essential for tubercular cases and so useful for many mental cases, are conspicuous by their absence. Well-equipped operating theatres, pathological laboratories, X-ray plant and artificial sunlight are practically non-existent. I may seem to lay undue stress upon defects in structure and equipment, but these are the essentials without which we cannot have anything deserving the name of hospital. We should be in a position to provide for our acute cases the same standard of treatment that general hospitals provide for physical ailments.

For chronic cases life should at least be made worth living, by providing comfortable housing, sufficient food, interests, occupation and recreation.

No case of mental disease can be regarded as absolutely hopeless.

(*b*) *Competent and sufficient medical staff.*—As to our medical staffs, I hope we are competent. I know we are grossly understaffed and scandalously underpaid. All our time and energy is absorbed by the routine, and we are so overwhelmed with numbers that special individual attention to our cases is practically impossible. The essential difference between general and mental treatment is that, in the former we treat the disease, in the latter the individual. Psychological analysis—trying to help the patient to unravel and solve his difficulties—takes more time than the average assistant can afford to devote to it.

(*c*) *Well-trained nursing staff.*—On the nursing staff depends the whole standard of life in a mental hospital. It is obvious that the patients react to this, and a keen observer can detect the evidences of even one nursing misfit in a ward. The potency for good of the sympathetic nurse is incalculable, and conversely, rough and unsympathetic handling work untold damage, particularly with new cases.

Ideally, a higher standard of intelligence and capability is necessary for the mental nurse than for the general nurse. Certainly greater tact, patience, perseverance, versatility and resource are required in this branch of nursing. Our present staffs cannot yet be said to have developed the proper attitude of mind. The old tradition dies slowly, and its signs and symptoms are still only too painfully evident. The strenuous efforts of the most energetic and enthusiastic teachers have not yet completely eradicated it. Violent and vigorous methods still capture the imagination of the new recruit, and the older hands still have abundant faith in their efficacy. It will take another decade of strenuous efforts on our part to produce a proper *esprit de corps* in our nursing staffs. The housing and general amenities are poor, and militate against the development of pride in their profession. The modern trade-union developments, while rightly improving the pay and reducing the hours of work, have had an adverse psychological effect. The individual regards his work simply as a "job" in the sense that he must put in so many hours for so much pay. This entails a shelving of those qualities which are demanded most by the very nature of the work. The supervision is weakened by the fact that head attendants and head nurses are generally members of the Workers' Union, and hence most of them subordinate principles of discipline and duty in favour of some less worthy cause. Sectional disputes, diversity and frequent alterations in rates of pay, strikes and threats of strikes have produced a spirit of unrest and revolt which neutralizes the efforts of enthusiasts to inculcate the proper nursing spirit. The development of the nursing spirit among our staffs is, to my mind, the most important item to aim at in order to improve our standards of treatment. There are many misfits in the service; now, however, the selection is more critical, training is more thorough, and the acquisition of the certificate of the Association is, in many hospitals, compulsory. Ample supplies of suitable candidates are available, and if the superintendents were left a free hand to eliminate the vocational misfits our nursing service would rapidly improve.

(*d*) *Hospital dietary.*—Disorders of nutrition are the rule in mental disease. Of the measures necessary to promote recovery careful attention to diet is not the least important. The standard dietary which under present conditions exists in our hospitals is inelastic, and the only variation possible is the addition of certain extras. The "mass production" style of central cooking is often done by an

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amateur, and is necessarily of the plainest kind. Invalid cookery as such is impracticable, and the provision of special appetizing meals for cases that require extra feeding is mainly impossible. Only the best food skilfully cooked should be given to the acute cases, for in illness the digestive organs need humouring. Our present diet scales are on the nutritional border-line; they might be considered sufficient for chronics; but the standard is certainly too low for admission hospitals.

(*e*) *Enlightened governing body.*—The present system of management by large visiting committees is cumbersome and inefficient. Everybody who has an opportunity of observing administration by large, unwieldly local bodies can appreciate its defects. Candid criticism by those fitted to form an opinion would be unpopular, and even dangerous. Our local boards are composed mainly of members of local councils elected to these bodies on a political ticket. These men cannot, except by the merest chance, be fitted for the direction of such a service as ours. The attitude of the general public to this service is one of apathy and indifference, and our local boards duly reflect this attitude. The aims and objects of our institutions are not appreciated, and their administration primarily as hospitals is little considered. An outsider, even with the best intentions in the world, cannot get any insight into the management of mental hospitals from the few crowded hours he spends there once a month. Committees are jealous of their powers, and rather resent too much leading by a superintendent. A superintendent has to expend a considerable amount of his energy to prevent them doing outrageous things.

As to central control, our service is now relegated to a very minor position in the Department of Local Government. Ours has become the Cinderella of the Public Health Services. In a memorandum drawn up in 1920 this Division expressed in the strongest terms the conviction that "a strong Lunacy Commission is essential to the efficient administration of everything connected with the care and treatment of the insane." This conviction is stronger to-day, and we should not cease to impress it on the powers that be.

Our service came under review by the recent Commission on the relief of the sick and destitute poor, including the insane poor. Owing to the *personnel* of the Commission—no member had any experience of this branch and only one was a medical man—the Commission could hardly be considered well qualified to report on our needs. As far as essential reforms are concerned the report was most disappointing. To relieve our overcrowding they suggested the extension of the system of auxiliary mental hospitals, and have recommended the utilization of some of the disused (and dilapidated) workhouses as auxiliaries. This I contend would be a most retrograde step. The provision everywhere of admission hospitals, suitable isolation hospitals for tubercular and other infectious cases and nurses' homes would, with few exceptions, obviate the necessity for auxiliaries.

We have fallen very much below the standards prevailing in similar institutions in England and Scotland. I would summarize the requirements necessary to bring the service reasonably up-to-date thus:

(1) Provide properly equipped admission hospitals, suitable isolation hospitals and nurses' homes. This will, in the main, relieve the overcrowding.

(2) Increase the medical staffs and provide better pay, prospects, and conditions of service, and standardize as far as possible the conditions of service.

(3) Standardize conditions of pay and service for nurses, and insist on qualifications. Probationers considered unsuitable should be required to leave at any time during the first year, at the discretion of the superintendent. Improve general amenities for the staff, providing recreation rooms in nurses's homes and all study and training facilities. Initiate a central depot for all the hospitals to provide training for selected members of staff in arts and crafts, with a view to extension of occupational therapy. Introduce as far as possible female nurses on the male side. The matron should supervise and direct all the nursing staff, and there should be a sufficient number of general-trained assistant matrons. No officer should be a member of the nurses' union. The nursing staff should be entirely separate from all other grades. Posts requiring special technical skill, such as cooks or laundresses, should only be filled by persons who have had special training. Tradesmen (paid at local trade-union rates) should only be employed from week to week at the discretion of the medical superintendent. At present many useless encumbrances are entrenched in these posts with fixity of tenure and pension rights.

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(4) Improve the diet all round, and have special dietary and cooking in the infirmaries and admission hospitals.

(5) Abolish committees, or at least reduce their numbers and curtail their powers.

(6) A strong Lunacy Commission should be set up, "divorced," or at least "judicially separated" from the Local Government Department.

(7) Out-patient clinics in connection with the mental hospitals would be a most desirable development, but under present conditions are not feasible. Similarly, the reception of voluntary boarders, even if legalized, would not be largely practised until conditions materially improve.

The paper gave rise to a lengthy discussion.

Dr. R. R. LEEPER, while approving of the ideals expressed in the paper, thought that they were, in the present state of the country, rather counsels of perfection. He reminded the meeting that, had it not been for the active opposition of the Irish Division, in the past, to certain proposed changes, our mental hospitals would have been very much worse than they were at present.

Dr. KEENE expressed similar views, and cast a doubt on the utility of some of the modern forms of treatment, *e.g.*, hydrotherapy.

Dr. D. L. KELLY, Inspector of the Free State Mental Hospitals, in replying at length to the paper, stated that they were attacking, even if slowly, many of the problems raised by Dr. Moran. Building schemes to relieve congestion were now in hand in Louth, Clonmel and Cork. He could not agree that the Central Authority could be divorced from the Government, and he considered that the present central authority—the Ministry for Local Government—was the most appropriate. He felt that superintendents might accomplish a great many of the suggested improvements, where no great expense was involved, without reference to committees or other authority. In his opinion, the medical staffs of the various hospitals outvied each other in their keenness for the welfare of the patients, but were generally overworked, and therefore unable to cope with clinical research.

Dr. NOLAN suggested that congestion might be more or less cheaply remedied by the erection of wooden structures such as they were familiar with in the war. This he considered was the most urgent problem with which they were faced.

Dr. MORAN, in replying, stressed the need for improved treatment in more hospital-like surroundings for the new admissions, and stated that the amenities for these patients should not fall below that provided by a general hospital.

On the motion of the CHAIRMAN, a unanimous vote of thanks was passed to Dr. and Mrs. Mills for their kind hospitality.

This terminated the proceedings.

EDUCATIONAL NOTES.

The Tavistock Square Clinic for Functional Nervous Disorders, 51, *Tavistock Square, W.C.* 1.—A Short Course of Lectures on Functional Nervous Disorders for practitioners and medical students will be given at the Clinic beginning May 19th, 1930. Lecturers: H. Crichton-Miller, M.D., Hon. Director of the Clinic; J. R. Rees, M.D., Deputy Director of the Clinic; W. Langdon Brown, M.D., F.R.C.P., St. Bartholomew's Hospital; W. J. Adie, M.D., F.R.C.P., National Hospital, Queen Square; R. G. Gordon, M.D., F.R.C.P., Royal United Hospital, Bath; Edward A. Bennet, M.B., D.P.M., Charles Berg, M.D., D.P.M., C. M. Bevan-Brown, M.B., Ch.B., Leonard F. Browne, M.D., C. L. C. Burns, L.R.C.P., M.R.C.S., Henry V. Dicks, M.B., M.R.C.P., John Freeman, M.D., St. Mary's Hospital; E. A. Hamilton-Pearson, M.B., Ch.B., E. Graham Howe, M.B., D.P.M., Alice M. Hutchison, M.D., M.R.C.P., Dr. Karl B. Martin, Freiburg; A. R. Redfern, M.B., Ch.B., Isabel G. H. Wilson, M.D., D.P.M., Maurice B. Wright, O.B.E., M.D., James Young, M.D. Demonstrations of Intelligence Testing by Miss C. A. Simmins, M.A., Hon. Psychologist.

Fee for the course: Medical graduates, £2 2*s.*; medical students (*i.e.*, unqualified), 10*s.* 6*d.* Tickets for the course to be obtained in advance from the Hon. Lecture Secretary at the Clinic. These lectures are open to medical students and graduates only.

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London Clinical Society.—The Fifth Annual MacAlister Lecture will be delivered at The London Temperance Hospital on Tuesday, June 24, 1930, at 9 p.m., by Sir Robert Armstrong-Jones, *C.B.E.*, D.Sc., M.D., F.R.C.P., D.L., Lord Chancellor's Visitor in Lunacy. Subject: "The Evolution of the Human Mind" (illustrated by lantern slides).

All students, medical practitioners and their friends are cordially invited to be present.

STUDY TOURS AND POST-GRADUATE EDUCATION SUB-COMMITTEE.

Visit of Dutch Psychiatrists to England, September, 1929.

During the hospitable and instructive visit to Dutch mental hospitals which members of this Association paid in October, 1928, a reciprocal tour was suggested by Dr. Engelhart, of Utrecht. Early the following year a provisional programme was submitted to the Dutch Association of Asylum Physicians. The Medical Superintendents of all the institutions in the programme, however, by their ready sanction and hearty invitation promptly divested the programme of any provisional character, and their cordiality will be remembered by our colleagues from the Netherlands with a tender regard for many years to come.

They arrived on Monday night, September 9, at Liverpool Street, and spent the first three nights in a modern Bloomsbury building. One was glad that their subsequent quarters formed a pleasant though varied contrast, and afforded more characteristic impressions of British hostelries.

On Tuesday morning the first instruction to "Steve," the driver of our coach, was to call at the box office of a certain theatre. This diversion from the strict path of psychiatry cost us the ill-repute of reaching Horton a quarter of an hour behind the scheduled time. This did not, however, lessen the welcome which Dr. J. R. Lord and his Staff gave our visitors in the Admission Hospital, where they saw the most recent conceptions in hospital design, both completed and in building. One heard urgent but whispered inquiries as to the nature of Plombières' fame and ritual.

Then we visited the wards of earlier construction, where the durability and costly appearance of the furniture and equipment were quickly observed, and no less so the leisure of the patients, who were making the most of a fine day of late summer in the gardens; leisure, in Holland, being of a somewhat restricted character.

We saw the provision made for various special medical and surgical departments of treatment, for gynæcology, actinotherapy and X-rays, for occupational therapy, remedial exercises and massage, each of which is directed by a visiting consultant or resident expert. We heard, too, of the team-work among the medical officers, and had ample evidence of the prevailing hospital atmosphere. Indeed, one could quote lessons from Horton which general hospitals might with advantage apply to their own administration. Among the special departments, the Malarial Research and Treatment Centre greatly appealed to our visitors in the completeness of its equipment and achievement.

Mr. Greenwood, the Chairman of the Hospital Committee, was so good as to come out to Epsom to meet the visitors, and to join them in a lunch, the excellence of which, had they but known at 8 a.m., would have restrained them from essaying the "English breakfast."

An important part of the visit was that given to the accommodation and training of nurses; we saw the recently erected Home, a building of really pleasing appearance, convenient and comfortable, where no small requirement of its residents had been forgotten. Their School of Instruction has well equipped quarters of its own, and it was evident to the visitors that nothing was omitted in that essential hospital duty, the training of the nurse.

We desired to spend a much longer time than was available in the Pathological section, but received a summons to the lawn, which proved both attractive and refreshing. And so we came to the close of what our colleagues from Holland regarded as a day of memorable first impressions.

A variety theatre had been selected as a place of instruction in our own tongue after dinner, but the velocity of subtle and oblique utterance proved a double

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obstacle where the simplicity of wit alone had been anticipated, for it was necessary both to translate the more local idiom and to diagnose the wit.

Dr. Mapother had not yet returned from a foreign visit, but had very kindly made arrangements for Dr. Harris and his colleagues to show our party the Maudsley Hospital on Wednesday morning. Having introduced the members to Dr. Harris, I had to leave shortly afterwards. Calling after lunch to accompany them to Bethlem, I found them in no haste to leave the hospitable table where they had been the guests of the Medical Superintendent. This hospital with its scientific research, clinical and pathological, and its "open" wards, was full of interest for our colleagues who, in Holland, have succeeded in extending so widely the same principle and practice. There any suitable premises may by Royal Decree be declared an asylum of the open-door type, where patients are received without certificates of any kind, and are at liberty to take their discharge on request.

This afternoon was spent at the Bethlem Royal Hospital, and the pathos of its approaching evacuation and demolition was appreciated. Our guests were struck with what must have been, at the time of its erection, the advanced and enlightened design of this historic building. Both the care of the patients and the research, well exemplified in Dr. Lovell's lecture in the museum, elicited the admiration of the visitors, and the genial tea-party with Dr. Porter Phillips and his Staff at the end of a warm afternoon left no manner of doubt that the visit to London would be most pleasantly remembered.

Leaving London in good time on Thursday morning, the party took the road to Littlemore, where Dr. Good demonstrated how an old building can be adapted to the needs of modern standards of clinical psychiatry. He gave us an instructive lecture on Kretschmer's anthropometric measurements, and Dr. Davies Jones related some psychological studies of considerable interest.

The influence of Dr. Good's popular out-patient clinic for nervous disorders, conducted at the Radcliffe Infirmary, on the admission-rate to this hospital was pointed out. The party observed that 11 of the 15 wards were conducted on the open-door system, and that as far as possible the patients lived in the open air. They learned of the psychological investigations that were being carried out into the significance of dramatization, delusions and incoherence.

A pretty display of the material products of occupational therapy in the special workroom and in the wards was inspected with close attention.

At lunch the visitors were warmly welcomed by Mr. Ashhurst, the Chairman of the hospital, whose loss to the well-being of the mentally afflicted of the city and county of Oxford we now have to lament.

Dr. Good was kind enough to arrange for us to see Christ Church after an early tea, before we left Oxford for Stratford-on-Avon.

Here some who had resisted the fatigues of the long day made maiden efforts with the punt on the river, and achieved the distinction, one heard, of travelling several lengths and reaching port without losing a pole.

We left Stratford at 9.30 on Friday morning, but not before visiting the birthplace of the Bard, with whose works our visitors were remarkably conversant. "Steve" supplemented that early pilgrimage by taking us along the lane on which stood Ann Hathaway's cottage. In an hour we reached Rubery Hill. A miniature Dutch flag in the reception room quickly met the eye as we arrived and reinforced Dr. Graves's welcome. We admired the charm and elegance of the new pavilion and visited several wards of different design, but most of the morning, I think, was spent in the surgical pavilion, where sepsis is so thoroughly chastened, and the colon so effectively cleansed after the manner of Plombières.

After a very acceptable lunch we visited Hollymoor and listened to a lecture of the first importance by Dr. Graves, which included a convincing demonstration of the efficacy of seeking and treating septic foci in mental disorder. The laboratory aspect of this research was discussed by Dr. Pickworth, who exhibited some very remarkable slides and specimens.

Although the dance season had not yet commenced, Dr. Graves considerately mustered the Hospital Orchestra at short notice, and organized a dance for our visitors to witness, this kind of entertainment for patients being a novelty to them.

We left in the evening after a long, instructive and hospitable day; and it is not unlikely that some members of the party will find their way back to this aboratory in ones or twos.

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Although the party was not generally set upon staying in the most spacious and gilded apartments, the Queen's Hotel had been selected for the night in Birmingham.

On Saturday morning, thanks to Dr. Graves's industry and foresight and to Dr. McCutcheon's readiness to receive us, it was found possible to visit the Monyhull Colony, and to see in operation those handicrafts, the beneficial influence of which has been so thoroughly and successfully explored in Dutch mental hospitals. Though the children's school was not in session, we saw this department and attempted some of the exercises devised to promote of erect locomotion among the least endowed of these little patients. We saw also the Treatment Centre and Sanatorium, the nurses' new home and several of the wards and their attractive setting before lunch, which had been advanced with great consideration for the need for an early start in the afternoon on our long run to Dolgelly.

We were fortunate enough to make Shrewsbury by tea-time. Most of this halt, however, was taken up in exposing films on the Tudor fronts.

In the course of our journey the motorists among us had learned to admire and repose in the driving skill and sense of "Steve," and were the better able to appreciate the pleasant country through which we passed along the Severn, and particularly when we later climbed up and down the stiff gradients of the Aran range and descended into the valley of the Mawddach, to reach our destination at the "Royal Ship" with most exact punctuality.

After dinner Dr. Pameijer took the piano, to the delight of all the occupants of the drawing-room. The first-aid which the instrument called for in the course of half an hour was not the result of his masterly yet delicate rendering of the Moonlight Sonata. A few minutes and a pocket screw-driver sufficed to put it on its pedals again, to yield impromptu accompaniments to the witty songs, in many tongues, by the versatile Dr. Grervel.

Dr. Rombauts had seen Snowdon on a previous visit, and was intent on seeing again the massive peaks and rugged slopes of Carnarvonshire. Sunday morning threatened rain, and "Steve" paraded the coach in running order for a wet day. His heavy task of raising the hood was, however, not approved, and many hands assisted in replacing it in its cradle, where it could not conceal the beauties of the way. We travelled along the tortuous shore of an estuary, where the charm of the wooded valley and the incoming tide joined with the sturdy magnificence of Cader on the left and Diphwys on the right, to present an ineffaceable picture. We followed the coast of Merioneth, passing Harlech Castle, to the Pass of Aberglaslyn and the vale of Gwynant. Leaving the coach at Pen-y-Gwryd, we climbed, some more, some less, up the track towards the summit of Snowdon, in order to obtain a view of the lakes of Peris and Padarn.

Lunch was proclaimed ready at the inn on our descent, but it took half an hour to exhibit the readiness and the first course.

The necessity of securing an hour or more of daylight to make some acquaintance with the walls of Chester and its Cathedral, its ancient houses and many other features of the pre-petrol period meant that there could be no loitering by the way to contemplate the falls and glens of Bettws or the windings of the Dee.

Our quarters in Chester were a modest temperance hotel, the first view of which made the wits remark the Dutch equivalent of "Surely, here we dress." The fare, however, was distinctly good.

Dr. Menzies had warned us of the hours it would take us to reach Cheddleton from Chester, so we were up betimes and on the road before the shops opened. "Steve" made the best of the early morning, the straight roads, and our host's directions, and delivered the party at Cheddleton ahead of the time-table.

We first saw the laboratory and some thoroughly interesting demonstrations by Dr. Wilkins. A tour of the wards showed us much solid comfort for patients, and numerous ingenious devices invented by Mr. Pebworth for securing safety and hygiene without ostentation.

The wards for the training of children, including those afflicted with the later manifestations of encephalitis lethargica, provoked great admiration by their remarkable handicrafts and entertainment. We saw the question of diet treated as a matter for serious study and research; the kitchen is, indeed, a school of domestic economy with a full complement of students. Of the originality and excellence of its products we had complete and intimate evidence at the lunch

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which the Mayor of Stoke-on-Trent, the Chairman of the Visiting Committee and other members were so good as to attend.

The beauties of the grounds and gardens and the expanse and perfection of the sports ground notably impressed the visitors with the far-reaching consideration given to the welfare of the patients.

Leaving the hospital after tea we encountered some of the stiff gradients of which "Steve" had been warned, but which gave him no anxiety. Our road to Buxton rose to more than 1,500 ft. in places, and gave us a view of several aspects of those striking outcrops, the Roaches, and of the broad moors of this end of the Pennine Chain.

The party took its various ways after dinner at the Savoy Hotel, several of us going to the theatre to witness the psychopathic's misdeeds in "The Green Light." Their origin was well concealed until the play was advanced and we had a good entertainment.

The mountain mist of Tuesday morning was dense enough to postpone our start by half an hour, but it cleared sufficiently to give us some idea of the Peak, which we skirted on our way, by Glossop and the chain of reservoirs, to Wakefield. Two hours' driving in the chilly mist of the moors brought us to our destination in a ready frame of mind and state of body to appreciate the Yorkshire welcome of Prof. Bolton in providing a hot beverage the instant we reached the hospital. This consideration for the well-being of the arriving guest being a feature of Dutch hospitality, it warmly appealed to the party.

Our tour of the wards of the Acute Hospital and then of the Chronic Villas was a round of pleasant but practically empty rooms, for the open-air life is one of the outstanding therapeutic agents of the hospital, canvas shelters being provided in the gardens for meals from April to October. During the morning we saw a large group of young women in fancy costumes give a spirited display of folk-dancing on one of the lawns; their instructors are friends of Dr. Wilson, and give a regular course of lessons in this and other recreational subjects. The hospital also has Girl Guides and Cubs.

We visited the scene of much pioneer effort in histological research where, in recent years, the contest with dysentery has been as unrelenting as it has been successful.

Lunch was a jolly meal, notwithstanding our host's merry attempts to recall one's early associations with psychiatry and the problems of our Mess. He later gave us a well-illustrated lecture on some wide variations in cephalic dimensions.

Presently we saw some of the oldest buildings for mental patients in this country, but, like the modern wards, they were empty, for the patients were taking their treatment undiluted in the open, a few with comments in the dialect of the county. In these days, when early treatment is so definitely called for, it is a sad fact that over 40% of the direct admissions are stated to have had mental disorder of more than three months' duration prior to admission; in the case of men this percentage is 50.

At Hatfield Hall, a manor house of rich though quiet taste, accommodation has been made for imbecile boys, whose training is largely on the lines of suitable manual occupations. Here we took tea in the garden, where the surroundings and the refreshments were very acceptable after our busy afternoon.

Hospitality at Wakefield extended twice round the clock, and after travelling a week in England our visitors arrived at an unquestionable occasion "to dress." At 7 o'clock we attended the Cinema in the hospital which, this week, had been very kindly arranged for the night of our stay. The programme, which included "Beau Sabreur," was a thoroughly enjoyable one, and we afterwards went below to supper—a no less enjoyable proceeding. At various hours we retired to our quarters in the hospital or its annexes.

On Wednesday morning we set off, after a crowded and memorable visit, to the Rampton State Institution, near Retford, where the new villas, the industries and the management of the problems associated with cases brought here because of their dangerous character, all kindled the warmest admiration of our Dutch colleagues. At the lunch and tea, when they were the guests of the Board of Control, they had many questions to ask, and they received much detailed information, including dietary tables of a comprehensive kind.

That night we stayed at Grantham at "The George" and were comfortably housed. Our main entertainment, after dinner, was provided by the benign

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caricatures of the party by the pencil of Dr. Grervel, who also gave us further items from his store of verse.

Accustomed now to early morning departures the party was well on its way south by 9 o'clock on Thursday. We left the Great North Road at Stamford, travelling slowly through this, one of England's oldest towns. Then to the south-west, we passed through a country of pleasing undulations, of grey villages each with its slender spire.

Our objective this morning was St. Andrew's Hospital, Northampton, a drive of about sixty miles, at the end of which the stimulating greeting of Dr. Rambaut was particularly welcome. We spent the morning in the spacious rooms of the hospital of 1836, and in the new Home for nurses, now building; we also visited the Chapel, a rare gem of singular beauty.

The intimate acquaintance which all our visitors displayed with our language was a matter of surprise to all who met them; nor were they at any loss for the apt phrase when expressing the gratitude of the party to their hosts in the more exacting manner of a luncheon speech. At St. Andrew's, his name being akin to that of our host, Dr. Rombauts, of Santpoort, was chosen to respond to Dr. Rambaut's toast, "The King of England and the Queen of Holland." He called upon his fellow travellers to sing "Lang zullen ze leven," the equivalent of "For he's a jolly good fellow," and they did.

Our visit would have been both instructive and noteworthy had it gone no further than the premises already visited, but our subsequent tour of the new Wantage Hospital rendered the day eventful with the graphic and concentrated exhibit of so many means for the exploration and remedy of mental illness. It would be indeed a most potent and evil spirit that could resist all the scourings, without and within, provided by the chambers of Turkey and Russia, the douches of Scotland and Aix, by the searchings of the X-ray and sun-ray, available in the blackest night, or by currents galvanic and faradic.

The Pathological Laboratories for bio-chemical, histological and bacteriological investigations leave no path untrodden in research for which this remarkable building has been erected. Lastly we came to those important quarters in which the patient passes his time of investigation and treatment. Whatever the laboratory findings ultimately indicate, he is assured at once of two remedies without stint or delay—fresh air and sunlight under conditions of repose and quiet.

This is a hospital where the first consideration has been the needs of the patient, and the last the academic demands of architectural magnificence; with all its scientific apparatus and the numerous contrivances for the most thorough ablution, it is, in truth, a refreshing and homely retreat.

Our lodging that night was at the "Blue Boar" in Cambridge, and no little daylight being required for the better acquaintance of the town, we took our leave of Dr. and Mrs. Rambaut soon after tea.

Our wanderings among the venerable buildings of Cambridge continued till dusk, and we had to examine the interior of the Round Church by palpation without inspection!

This was our last night as an entire party, for although about half the number remained for Friday night in Colchester, the others went their respective ways during Friday.

There were evident signs of regret on leaving Cambridge.

The last day was devoted to the Royal Eastern Counties Institution, or, more exactly, to as many of its branches as we could visit in a vigorous day. We met Dr. Turner at Halstead, where the Guides' School received us with a greeting which would have done credit to a Signal Company. We saw the classes at work and at play, and girls of all sizes in drill, dance and pantomime. This industrious little community does much towards its own maintenance, and had made the many dainty things that were worn in the numerous scenes so nimbly represented.

It was on our journey from Halstead to Colchester, after some 700 miles of touring, that the first shower compelled us to use the hood of the coach.

In the town we visited the two houses for boys, two groups with very unequal mental endowment, of which however the best use is being made, as may be seen by the products of their hands and the delight with which they perform their physical exercises. Dr. Turner next took us to the headquarters of the Institution, where the boys' capital band entertained us while we enjoyed an ample lunch.

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In these premises are some of the most pronounced cases of deficiency, both mental and physical; they all, however, make a very successful claim for devoted attention. It was a great change to pass to the business-like workshops, where no patient toils with his hands who can control a loom or a machine. The contrast was still more striking when we saw the gymnastic display, the big lads somersaulting not only over the wooden horse, but over another boy kneeling on it. A dance in the Concert Hall completed the rapid survey of some of the activities in these buildings, the second oldest foundation of its kind in England, and we passed on to a late development, the Hostel at Lexden, from which girls go out daily into domestic service.

After tea in this pleasant residence five of us left the main company and "Steve" brought us back to London; the others left for Holland on Saturday morning, September 21.

From the first days of the tour our guests were greatly impressed with the structural excellence and comfort of the hospitals which they visited, and with the wealth of care bestowed on the patients as well as the thoughtful provision for the amelioration of their enforced stay; but having in mind the intensity and success of the promotion of occupational handicrafts among the noisy, degraded and demented patients of their own hospitals in Holland, it was clear that their frequent view, here, in gardens and wards, of patients reposing in unoccupied leisure made them wonder sadly if their friends in England had not heard of the work-therapy gospel of Simon of Gütersloh, to which some reference was made in the January number of this Journal for 1929.

From long letters of appreciation and gratitude which I received from Dr. Stuurman and Dr. Pamcijer, one realized that our visitors had been keenly observant of every detail of administration and structure, of research and treatment. One visitor had inquired where the psychological research was carried out; I told him, and added that we often called psychiatry "psychological medicine." For the comfort of the Ministry of Transport, I must not conceal their high regard for "the magnificent roads everywhere in England."

The statutory provision for dealing with high-grade mental defectives and the admirable means which they saw for meeting the needs of this group gained the entire commendation of our colleagues, who have no legal powers in Holland for protecting the feeble-minded, or for accommodating them even in "open" wards, otherwise than in the mental hospitals. I gathered that the personal and therapeutic attention given to our patients' physical, mental and social needs made a deep impression which will at no distant date be reflected in the hospitals of the Netherlands, for Dr. Stuurman writes from Leiden: "We have all seen and heard many things which we shall try to imitate here."

A. B. B.

PRESENTATION.

Prof. G. M. Robertson, of the Chair of Psychiatry in the University of Edinburgh, was recently presented with his portrait (painted by H. J. Gunn) by the managers of the Royal Edinburgh Hospital, to mark their appreciation of his many years' service as Physician Superintendent of the Hospital.

NOTICES BY THE HONORARY LIBRARIAN.

Principal books recently added to the Library:

Psychologie du Socialisme. Gustave le Bon. 1917.
Problémes généraux d'heredité psychologique. Poyer. 1921.
De l'inconscient au Conscient. Geley. 1929.
La Psychologie inconnue. Boirac. 1912.
La méthode Psychanalytique. De Saussure. 1922.

Additional books presented by Dr. Whitwell:

Origins of Art, a Psychological Enquiry. Hirn Yrjö. 1900.
Herbartian Psychology. Adams (undated).
Applied Eugenics. Papenhoe and Johnson. 1920.
The Psychology of Marriage. Gallichan. 1917.
St. Audry's Hospital Reports (bound). 1898–1924.

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The following journals are circulated from the Library:

American Journal of Psychiatry.
The Psychological Review.
Journal of Neurology and Psychopathology.
L'Encéphale.
International Journal of Psycho-Analysis.
Journal of Abnormal Psychology.
Mental Hygiene.
Journal of Nervous and Mental Diseases.
Revue Neurologique.
Archives of Neurology and Psychiatry.
Journal of Comparative Psychology.

Members are requested to return all long-outstanding books to the Library as soon as possible for the purpose of cataloguing. It appears that in a number of nstances in the past there has been a failure to register the loans.

Members are invited to make gifts to the Library to assist in building up a historical collection of psychiatric works from the seventeenth century onwards. In selecting books for presentation, members are advised to consult the Hon. Librarian to see what books the Library possesses and those it is desirable it should possess. There is now ample room for the expansion of the Association's collection of books.

Any communications concerning books, journals or library matters should be addressed "Librarian, Royal Medico-Psychological Association, 19b, Tavistock Square, London, W.C. 1."

Bronze Medal and Prize for 1931.

Dissertations for the Association's Bronze Medal and Prize must be delivered to the Registrar by April 30, 1931.

Divisional Prizes for 1931.

Papers certified as eligible for this competition must be forwarded to the Registrar not later than April 30, 1931.

Gaskell Medal and Prize.

The following Regulation has been rescinded on the authority of the Annual General Meeting (Wakefield), 1928:

"(3) A thesis based on original research, if of sufficient merit, may be accepted by the examiners in place of either the written or the clinical examination or both."

The examination for the Gaskell Medal and Prize and the examination for the Certificate in Psychological Medicine will be held at the Maudsley Hospital, Denmark Hill, London, in May, 1931.

Applications for entry to each examination to be made to the Registrar, St. Andrew's Hospital, Northampton.

There is no fee for entrance to the Gaskell Prize Examination.

The entrance fee for the examination for the Certificate in Psychological Medicine is three guineas.

The Nursing Badge.

This Badge, founded at the Annual Meeting (Wakefield), July 11, 1928, can now be obtained from the Registrar. The application must be made on a special form and accompanied by 6s., which includes the cost of engraving the name and registration number of the holder.

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The badge is issued for general use, but especially for occasions when the nursing medal is inconvenient or inappropriate. It is fitted with a brooch-pin for women and a crescent-shaped button-hole stud for men.

For full particulars of the Association's Medals and Prizes and the Certificate in Psychological Medicine see "Year Book" prefacing the January number of the Journal.

NOTICES BY THE GENERAL SECRETARY.

Death.

SIDNEY COUPLAND, April 29, 1930.

The Maudsley Lecture, 1930.

The 11th Maudsley Lecture by Mr. JUSTICE MCCARDIE will be delivered on the occasion of the November Quarterly Meeting.

Notices of Meetings.

The Eighty-Ninth Annual Meeting of the Association will be held at Oxford during the week commencing June 30, 1930, under the Presidency of T. SAXTY GOOD, *O.B.E.*, M.A., M.R.C.S., L.R.C.P.

As the accommodation at Oxford is limited it is essential that members desiring to attend the meeting with their wives should communicate with Dr. Good, Littlemore Hospital, Oxford, within the next two or three weeks. Accommodation will be available at three Colleges, at a charge of 10*s.* 6*d.* per day. This should be booked not later than March 25, 1930. They are:

Lady Margaret Hall.—20 double rooms and 80 single rooms available, from Monday, June 30, to mid-day Friday, July 4.

Somerville College.—Single rooms only, available from Monday, June 30, to Saturday, July 5.

Queen's College.—A few rooms for men only.

Those requiring hotel accommodation should make their own arrangements early.

The Annual Dinner will take place on July 2 in Christ Church Hall, and it will be extremely helpful if members desiring to attend will notify Dr. Good as soon as possible, at the same time stating if they intend bringing guests.

An interesting scientific programme has been arranged for the mornings of July 2, 3 and 4.

Members have been invited to a garden party at Littlemore Hospital (July 1), civic reception at Oxford (July 1); Morris Motor Works (July 2), garden party, Warneford Hospital (July 2); lunch at Oxford by Warneford Hospital (July 3), garden party, Nuneham Park (July 3), evening reception (July 3). There will be a ladies Club Room and opportunities for golf.

Quarterly Meeting.—May 22, 1930, at the British Medical Association House, London, W.C. 1.

South-Eastern Division.—Spring Meeting at the City Mental Hospital, Hellesdon, Norwich, April 30, 1930.

South-Western Division.—April 24, 1930, at Hume Tower, Bournemouth.—October 30.

Northern and Midland Division.—April 25, 1930, at The Lawn, Lincoln.

Scottish Division.—June 27, 1930, at Hartwood Mental Hospital, Hartwood, Lanarkshire.

Irish Division.—July, 1930.

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WILLIAM BEVAN-LEWIS, M.Sc., M.R.C.S., L.R.C.P.

Born May 21, 1847.
Died October 14, 1929.

Ordinary Member, 1879.
President, 1909–10.
Honorary Member, 1918.

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THE
JOURNAL OF MENTAL SCIENCE
[*Published by Authority of the Royal Medico-Psychological Association.*]

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WILLIAM BEVAN-LEWIS, M.Sc., M.R.C.S., L.R.C.P.

FOLLOWING the death of Sir David Ferrier in 1928 has occurred that of Dr. W. Bevan-Lewis, and thus have passed away in rapid sequence the two great neurologists who gave the Wakefield Mental Hospital an international reputation during the last quarter of the nineteenth century.

The earlier contributions of Ferrier were experimental while all those of Bevan-Lewis were histological, and for many years the former overshadowed the latter as regards public recognition. It is nevertheless true that these two workers were equally instrumental by their separate methods of approach in laying the foundations of our knowledge of cortical localization, and that the histological descriptions of Bevan-Lewis, both in precision and general accuracy of detail, are as true to-day as when published over forty years ago.

Bevan-Lewis, the son of William T. Lewis, of Cardigan, was born on May 21, 1847, and died on October 14, 1929, in his 83rd year, nineteen years after his retirement from the active practice of his profession.

It would be presumptuous for one who knew so little of Bevan-Lewis personally to attempt a description of his life and work at Wakefield in view of the existence of such a first-hand appreciation as that of Sir James Crichton-Browne, which was published in the *British Medical Journal* of November 2, 1929, and, I therefore, have taken the liberty of re-inserting it here:

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"With Dr. William Bevan-Lewis has passed away one of the most diligent and productive of labourers in the field of medical psychology in this country during the last quarter of the last century and the first decade of that through which we are hurrying along. With few outside interests he was wedded to medical psychology, regarded it with an affection only second to that which he bestowed on his ever-helpful wife, and notably contributed to its advancement, on both its practical and scientific sides.

"After completing his studies at Guy's Hospital and qualifying, Bevan-Lewis, then 21 years old, became Assistant Medical Officer at the Buckingham County Asylum, but after being there for two years, and having married, yielding to the wish of his family, commenced private practice in Cardigan, his native town. But he had been strongly attracted to the study of mental disease, and the call of the laboratory was upon him. He soon found that his occupation in a mountainous district of Wales was uncongenial, and left him no opportunity for the research work in which he earnestly desired to engage. He sought, therefore, to re-enter the asylum service, but at that time there was not an asylum in England that provided accommodation for a married assistant medical officer, and so, after several attempts, he failed to get his foot on that ladder. Ultimately, as a forlorn hope, he applied to me. I was on the look-out for talent, and happily discerned his zeal and ability. I succeeded in making the necessary arrangements, so that he and his wife took up their abode at the West Riding Asylum in the beginning of 1875. He came there as a clinical assistant without pay, though board and lodging were provided, but promotion was rapid at the West Riding Asylum in those days, and within a few months he was appointed medical assistant and pathologist. In that capacity he continued to act under my medical directorship until I became a Chancery Visitor in April, 1876. My official relations with him were of the happiest description, and ripened into warm friendship, which continued unchilled until his death.

"During the eight years after I left Wakefield I was in constant communication with Bevan-Lewis, and knew what excellent work he was doing in the research laboratory and as deputy medical director, which he had become; but I confess that when he was appointed to the chief charge in succession to Dr. Herbert Major, in 1884, I had doubts whether, with all his ability, the somewhat delicate, studious and retiring subaltern, with keen Cymric sensibility, would be equal to the administrative control of a great mental hospital with 1,600 beds, gradually expanding, and with a certain reputation to maintain. His predecessor had found the burden too oppressive. But 'as thy days, so shall thy strength be,' and my doubts were speedily dissipated. From the first Bevan-Lewis, by his rectitude, assiduity and modest self-possession secured the confidence of his staff and his committee, and for twenty-six years he remained the trusted and esteemed head of the asylum, and the beloved physician at the bedside.

"Not only did Bevan-Lewis maintain unsullied the best traditions of the West Riding Asylum, but he extended its usefulness and

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introduced some new developments. He created a dispensary or out-patient department, the first experiment of the kind attempted in an asylum in this country; he made special provision for the education and training of the weak-minded; he established a reception block, furnished with all the most modern apparatus for clinical observation and research; and he constituted the asylum in some measure a post-graduate school, for he opened it for short periods of residence to young medical men anxious to obtain some special knowledge of mental and nervous disease. Many who availed themselves of the privilege thus offered, and who have since attained professional distinction, together with many of the students who attended his class at the Leeds School of Medicine, afterwards the University of Leeds, will bear testimony to the stimulating nature of his teaching, and to the charm and encouragement of his personal influence.

"Of Bevan-Lewis's manifold scientific labours and achievements it is impossible to give here anything but the barest outline. His first contribution to medico-psychological literature was a paper published in the *West Riding Asylum Medical Reports* for 1875 on 'The Histology of the Sciatic Nerve in General Paralysis'; in this he described degenerative changes in the peripheral nerves in the advanced stages of that disease, and correlated these with the spinal changes in locomotor ataxia. This was followed in the *Reports* of 1876 by a careful calorimetric study of 'The Influence of Various Alkaloids on the Generation of Animal Heat.' In the *Proceedings of the Royal Society* for 1878 there appeared a paper on 'The Lamination of the Motor Area of the Brain,' and in *Brain* of the same year there was a paper on 'The Comparative Structure of the Cerebral Cortex,' which was the starting-point of those discoveries in histological localization of the cerebral cortex by which he will be best remembered. While on the editorial staff of *Brain* I received from Bevan Lewis invaluable assistance, and it was in its pages that appeared the series of articles on 'The Methods of Preparing, Demonstrating and Examining Cerebral Structure in Health and Disease,' which were afterwards collected in book form with the title of *The Human Brain: Histological and Coarse Methods of Research*, and published in 1882.

"It was in 1889 that Bevan-Lewis issued his *magnum opus*—his *Text-book of Mental Diseases*—the product of years of elaborate investigation, a book now forty years old, but one that still in many respects holds its own, and has not been altogether squeezed out by the multitude of text-books that have since emerged, especially in the United States. The book is much more than a text-book, being really a compendious system of psychological medicine. It embodies all the author's histological observations, with admirable illustrations; it supplies life-like studies of the symptoms of the various forms of mental disease—studies that could not be bettered to-day. There have, of course, been great advances in ætiology and treatment since the text-book was written, but in its clinical and pathological sections it is still abreast of our knowledge or to-day. Enormous pains were expended on its preparation, and

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it is singularly lucid in style. In later years Bevan-Lewis continued to contribute to *Brain* and the *Journal of Mental Science* thoughtful essays on alcoholism, crime and insanity; on the neuron theory; and on rest and sleep.

"Bevan-Lewis received the honorary M.Sc. degree of the University of Leeds in 1905, and was President of the Medico-Psychological Association in the year 1909–10. The value of his work has been fully appreciated by his own specialty at home and abroad, and has been widely recognized by the profession at large. That it did not receive the higher acknowledgment it deserved was no fault of mine or of Sir David Ferrier. One of the gentlest and most unobtrusive of men in an age when notoriety is the universal quest, Bevan-Lewis persistently kept himself in the background."

Before referring specifically to some of the chief researches of Bevan-Lewis, I should like to insert here certain obituary remarks I contributed to the *Lancet* shortly after his death. I give these as they stand, for as a rule such descriptions are spoiled by re-writing:

"I feel doubtfully qualified to write even a brief psychological sketch of the great neurologist whom I succeeded at Wakefield Mental Hospital nineteen years ago, for I saw Bevan-Lewis on the day of my election and on no other occasion. I remember vividly my interview with him in his drawing-room, now a dormitory of the institution. He was not in the least the man I had often pictured to myself during the twenty years I had been familiar with his work and reputation, and whose beautiful drawings of the cortex cerebri had first attracted my attention to neurology. He was quiet, dignified and reserved, and though perfectly courteous, neither volunteered nor provided any information of value regarding the Institution and my new duties. I could fully appreciate his point of view. I was a stranger about to undertake the work he was laying down and of which he was jealously proud; and his main object was to obtain the best terms possible for the staff he was leaving behind him. I parted from him with regret, feeling certain that I should never see him again. I wrote later asking if I could come over before he left Wakefield, but he replied that it was not necessary and that I should find everything in perfect order. A lengthy residence in Wakefield has satisfied me of the truth of this description of a mere interview as a picture of the mentality of Bevan-Lewis. He was an enthusiast, and a recluse with few interests beyond his scientific investigations. He was retiring and aloof, and rarely to be seen or interviewed, but this very attitude towards others, which might have led lesser men to be ignored, in the case of Bevan-Lewis was a powerful factor in the success of his administration. For he was successful, and during his twenty-six years as Medical Director he saw, and took a prominent part in, administrative changes and extensions which taken alone would have gained him a high reputation. He witnessed the opening of Menston and Storthes Hall Mental Hospitals, and the planning,

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building and early years of working of a new mental hospital attached to the Wakefield Asylum of old. He held views on mental hospital evolution which were almost prophetic. As early as 1889 he founded at Wakefield an out-patient department which is still flourishing, and during many years, until in fact the opening of Scalebor Park Mental Hospital rendered the step unnecessary, he provided private mental nurses for the district. Referring in 1889 to the proposal, under the auspices of the London County Council, to erect an acute hospital, providing accommodation for 100 patients, to appoint a staff of experienced visiting physicians, and to establish in connection therewith a school for the scientific study of mental disease, he remarked:

> "It must be admitted that the tendency to the establishment of the hospital system is the correct one, and that this end will be eventually realized. Within the metropolitan area the conditions are so peculiarly favourable to its development that one is surprised at the limited accommodation proposed by its advocates: but as applicable to the provinces, the difficulties of applying the system are obvious, and a modified procedure is necessarily demanded. That the large county asylums should eventually become receptacles for the hopelessly incurable chronic class, officered and managed upon a far more economical system than the present; that special hospitals for dealing with the acute insane, with a well-trained staff of experienced alienists, and affording facilities for the development of clinical teaching should be instituted; and that they should contain centres for scientific investigation and research, are facts so self-evident as to require no further emphasis here.'

"These views found expression in Bevan-Lewis's administration during the next twenty years. He left the Chronic Block as he found it, an antiquated building surrounded by high walls, and it is doubtful whether he even noticed its sanitary defects, so endeared to him was every brick of Wakefield. In 1900, however, he witnessed the opening of the Acute Hospital, a modern building replete with what were at that time unique means for research and methods of scientific treatment. This hospital contained a large lecture hall and library and several laboratories, and it possessed extensive provision for electro- and hydro-therapeutic methods of treatment. I believe that to a great extent the new hospital realized Bevan-Lewis's ideal, although its completion came too late to enable him with his enfeebled health adequately to administer it. Bevan-Lewis lived and worked in a world apart, and if he felt and resented the belated recognition accorded to his work on cortical localization no one knew it."

I shall conclude this inadequate appreciation of a great man by referring to two aspects of his histological work.

In the first place I would draw attention to the painstaking

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character of his methods, as exemplified by his detailed and precise descriptions of histological appearances and by his numerous and most beautiful drawings which profusely illustrated his *Text-book of Mental Diseases*, and also constituted striking illustrations in the text-books of the time. The other aspect of Bevan-Lewis's histological work to which I would draw attention is that for which his name will ever find an honoured place in neurological literature, I allude to his researches on cortical localization. How such detailed, clearly illustrated and convincing work could be ignored can only be explained by our common experience that research workers, like others, usually read only matters which interest them, and that during the period under review Bevan-Lewis stood almost alone as the representative of his special subject.

I will conclude by giving a paragraph in which, in 1909, I summarized the way recognition finally came to the work of Bevan-Lewis:

"The first important paper on cortical localization was that of Bevan-Lewis and Henry Clarke, published in 1878, on the cortical localization of the motor area of the brain. This communication, which localized the motor area in front of the furrow of Rolando, attracted little attention owing to the fact that the conclusions contained in it were opposed to the results of the numerous physiological experiments which, during the last two decades of the nineteenth century, largely monopolized the field of inquiry into the functions of the cerebrum. The observations of Lewis and Clarke have, however, at last obtained complete if belated recognition in consequence of the experimental work of Sherrington and Grünbaum, recently confirmed by Oscar Vogt, and the histological researches of Campbell and of Brodman. It is an interesting and in many respects a fortunate fact that the experimental method, which was responsible for the non-recognition of an important contribution to our knowledge, was also the method which first supplied evidence of its truth." JOSEPH SHAW BOLTON.

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Part I.—Original Articles.

PSYCHO-PATHOLOGY AND THE HERD-INSTINCT.

By J. Ernest Nicole, L.M.S.S.A., D.P.M.,

Senior Assistant Medical Officer, Lancashire County Mental Hospital, Winwick, Warrington.

"Read much, conclude little."

Introduction.

Without psychology there can be no psycho-pathology; and any advance that psycho-pathology may have made from time to time has in no small measure depended on corresponding progress previously achieved in the realm of psychology. The reason why psycho-pathology made little headway until comparatively recently may be found in the unfruitfulness—from a medical point of view—of classical psychology.

Whether one considers the structuralist or the functionalist schools one cannot help being struck by the barrenness of their psychology when applied to living individuals. "Living," because the whole of psychological theory appears so "dead," so inanimate when equated with the living creatures whose conduct it is supposed to explain; "individuals," because classical psychology is but an abstraction based upon average minds, an abstraction descriptive of just those characteristics and processes that are not individual but are, on the contrary, factors common to all. This studying of mind—whether as a sum of mental items or as a series of mental acts succeeding one another—is incapable of yielding an explanation of human conduct, nor can it account for anything more than the similarity between one mental life and another. But from our point of view as physicians, what we require is a system that will explain just those differences that do occur, those discrepancies between "individual" and "average" conduct that are the starting-point for psycho-pathological inquiry.

One may say that a great deal of useful ground was cleared by the older psychologies, but that no living, reacting and adjusting mind could profitably be viewed merely as a particular grouping of ideas

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or as a particular sequence of faculties being put into play. It required the addition of two new concepts—or shall we say a greater application of them—to fertilize the accumulated dogmas of classical psychology.

A. The first of these concepts was that of mental energy, based upon a more active, dynamic view of nature (including mind), and resulting in the various doctrines of instinct. It became increasingly recognized that no grouping of "ideas" could ever have any compelling value, or that the various "faculties" could be brought into play, without, behind it all, some state of need, of tension, some urge definitely requiring expression.

B. The other concept was the one embodying the idea of struggle, or inner stress, in fact, of conflict; the behaviour of the human organism being regarded as a resultant of conflicting trends rather than as an expression of single and successive urges. It is true that conflict had already been put forward by Herbart, but as occurring between ideas and not between instincts.

There have been many views concerning the nature, *rôle* and number of instincts, acting as the prime movers of conduct; and in many of these, place has been found for the concept of a herd-instinct or instinct of gregariousness, though it has been variously defined and equally variously applied.

Now, if such an instinct be really one of the springs of human action, one of the factors accounting for normal conduct, then it may well be asked whether this instinct should not be brought into greater prominence than hitherto in the explanations offered for abnormal behaviour. If, on the other hand, the existence of this instinct be an assumption not sufficiently supported by evidence, then perhaps it should be denied even the small place accorded it by some writers in the production of mental derangement.

As a small contribution towards indicating the ways in which a much needed reconsideration of the question might be undertaken, we shall refer to a few of the difficulties associated with the subject of instinct, and then proceed to review the main conceptions current in applied psychology in reference to a possible "herd-instinct." Next, a glance will be given to the standard authors on psychiatry and psycho-pathology in order to see to what extent a herd-instinct is recognized by them, the light in which they consider it, and the application—if any—which they make of it. If such a survey reveals that the position of a herd-instinct in psycho-pathology is so obscure and uncertain as to require further consideration, then it will become incumbent upon us to examine more

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closely the grounds on which the theory of a herd-instinct rests, and perhaps even discuss briefly some other sociological theories relevant to our problem, in order to formulate some tentative conclusions for future guidance.

Instincts and Psycho-pathology.

1. It is not an easy task to assess the exact value of instincts in psycho-pathology, because such widely divergent views are held on the subject that the whole question bristles with difficulties. For one thing, it is only very recently that any serious attempt has been made to separate intuition from instinct; by some the two are regarded as distinct from one another, by others the former is made a derivative of the latter. Intuition was considered by Descartes as "intelligent instinct"; that kind of instinct that is peculiar to thinking Man as compared with the instinct which he shares with the lower animals, and the same concept reappears in Driesch's psychology under the guise of "entelechy." Jung defines intuition as "instinctive apprehension"; Diblee calls it "extra-conscious thinking," further dividing it into primary intuition and intuition after reflection. Where instinct ends or becomes intuition, and the relation of the latter to intelligence, is very far from clear; and though Burrow has recently tried to shed some light on the subject, it has been at the cost of creating further complications. All we can do at present is to realize the insecurity and confusion still to be found in the delineation of instinct, and be accordingly cautious in our acceptance of theories.

Some authors write of "Instinct," whereas others describe a number of separate "instincts." Similarly, those who emphasize the behaviour aspect may only recognize "instinctive behaviour" in general, or else they define and enumerate specific "instinctive acts." Instinct, which to Watson appears merely as a tendency to habit-formation, has been defined by James as "the faculty of acting in such a way as to produce certain ends without foresight of the ends and without previous education in the performance." Lloyd Morgan, however describes instinctive behaviour ,and says it comprises "those complex groups of co-ordinated acts which though they contribute to experience are on their first occurrence not determined by individual experience; which are adaptive, and tend to the well-being of the individual and the preservation of the race . . . which are similarly performed by all members of the group,

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but are subject to variation and subsequent modification." With this definition many other authorities, *e. g.*, Hobhouse, are in general agreement. The objection must be noted, however, that the words " performed by all members of a group " debar any classification of behaviour from being applied to an isolated individual. Moreover, the definition gives prominence to the evaluation—always difficult —of what constitutes the well-being of an individual, and this must depend on the judgment of the observer, a variable factor that should be kept well in mind.

Shand takes a purely motor view of instinct, without recognizing definite instinctive trends, and bases his description upon an enumeration and classification of such single acts as can be performed instinctively. Thorndike's approach is very similar. The actual cause of such acts is regarded by some (*e. g.*, Rigano) as a biological memory or, following Semon, in the light of " inherited engrams."

2. Of far greater importance in psycho-pathology, and made of much moment in several psychiatric text-books, are the views of McDougall on instinct. He considers all instinctive activity as due to a number of innate trends, the instincts, which he groups according to the general nature of the acts which they prompt and the result that is immediately achieved. He views these trends under three aspects: the cognitive or perceptual, involving the fact that each instinct is aroused by a particular kind of situation; the affective, relating to the specific emotion that is felt when each instinct is aroused; and the conative, in reference to the actions performed. In his scheme there are some twelve specified instincts that are the prime movers of behaviour, to which are added a few general " innate tendencies " such as sympathy and suggestion.

More comprehensive still, though probably less sound psychologically, are the views of the French and allied schools, who multiply the number of instincts to an extreme degree. We might instance how Renan speaks of a political instinct, of an instinct of organization, or an instinct of copying; or Jastrow's assumption of a religious instinct, and so on. If specific affective feelings do accompany specific instincts, or are part of them, then recognition of such a large variety of instincts implies a correspondingly more numerous listing of emotions. It is true that language may be inadequate for expressing more emotions and that a richer vocabulary might assist finer shades of difference between emotions to be defined. Interestingly enough, the Fijians have eleven different words to describe all that we include under the one term " fear."

But to return to McDougall's form of instinct theory. In

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modern psycho-pathology instincts have been made considerable use of in connection with "mental mechanisms." It is common knowledge how an instinct is said to be (1) suppressed or (2) repressed; how further possible fates may befall an instinct, such as (3) regression, (4) canalization, or (5) deflection. To these common ones notable additions have been suggested, for instance by Bovet, who recognizes (6) objectivation, satisfaction in witnessing an act instead of performing it, (7) subjectivation, becoming the object of action instead of the doer, as when sadism turns into masochism, and (8) platonization, consisting of the mental consideration of the desired act without actual performance of it. These conceptions have been largely accepted (though often under different names) by psycho-pathologists, as well as by several sociological writers. Graham Wallas, for example, lays some stress on "baulked dispositions" leading to mental instability.

Among the instincts enumerated by McDougall is the herd-instinct or "instinct of gregariousness." He conceives this merely as an urge towards grouping, adding that it reinforces other instincts; in his later works, however, an implication appears that he regards this instinct as tending not only towards the formation of groups, but also towards their organization. He does not, be it noted, go as far as committing himself to any statement whether the forms of organization are instinctively determined or not. This instinct receives marked emphasis from McDougall, and yet when it comes to his theories of society, he seems to make but little use of it.

3. Very different from McDougall's classification are the schemes we must now consider; in contrast with the "multiple instincts" view just described, these are characterized by the fewness of the instincts enumerated and the breadth of their delineation.

First we have the Freudians who regard all behaviour, instinctive or otherwise, as due to either (1) ego urge or (2) sex urge. And then there are some later writers, such as Tansley, who would add (3) herd urge. Here then we have human conduct accounted for by three main urges only, these urges being recognized according to their ultimate goal and results (not their immediate, as with McDougall) and subserving respectively the ego-needs, the sex-needs and the herd-needs. These instincts appear as very broad trends, compared with the narrow and limited instincts of McDougall, and might in contrast to the latter be said to be deferred in their ends. We must recognize that whereas some authors speak of these three urges as specific and indivisible trends, others have been inclined to regard them as capable of being split up into smaller components,

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as when Freud himself speaks of sexual instincts or of instincts-inhibited-in-their-aims.

Perhaps the best position to adopt is to conceive of McDougall's instincts not as constituting three main urges but as working in their service. For instance, the instinct of pugnacity is not part of any one of these three urges, but it may work for the furtherance of each in turn; at one moment it may be tending to an end that is ultimately egoistic, or it might be furthering sexual needs, or again it might be leading to social results. In other words, the three primal needs of the race may enlist in turn any and every one of McDougall's "instincts" for their ultimate satisfaction.

A strong point in favour of this "broad" view is that it seems to give more meaning and fullness to human behaviour; it represents the organism as responding more as a whole than when its acts are split up into unitary parts and these ascribed to that or the other narrow instinct. The unfortunate fact is that some writers designate these broad trends by the same term "instinct" that is used by, say, the followers of McDougall to describe narrow tendencies. In fact, much of the misunderstanding of Freud has been due to what he calls sex being considered as a narrow instinct, largely dormant when not aroused by specific stimuli, and one leading merely to single acts of reproduction; whereas sex should, in accordance with Freud's views, be regarded as a broad urge, a state of tension, leading the individual to seek all situations in which he can behave in ways that ultimately lead to the preservation of the race.

It seems to me very likely that the regarding of instincts in the narrow way, as trends that become evident only in presence of specific stimuli and which in their absence remain presumably in a merely potential state, is what has led certain psycho-pathologists to emphasize the importance of precipitating causes in the production of mental derangement. Correspondingly, the viewing of instincts in a broad way, as urges leading to states of prolonged tension, states that require relief even in absence of related stimuli and therefore force their possessor to seek situations appropriate to an expression of such urges, is the reason why other psycho-pathologists have so stressed the predisposing cause in mental disorder.

Some criticisms of this broad classification into two or three fundamental urges, and a few constructive suggestions, will be offered in a later section; but first we have to consider—in order to dismiss them—two of the misleading and unjustifiable ways in which the term "herd-instinct" has been used by some authors.

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4. The term " herd " or " gregarious " has been applied not only to the tendency toward gregariousness but also to (*a*) those trends that are especially apt to show themselves *in* gregariousness and (*b*) those innate tendencies that *assist* or maintain gregariousness and the formation of groups, but which achieve this result so to speak incidentally and which cannot be regarded as urging directly towards, or finding complete satisfaction in such group formations. That is, trends that work to many more ends than that of producing a single group.

The former trends (*a*) that show themselves in gregariousness have caused no little confusion in psycho-pathological description, and will be referred to again in connection with psychiatry. Those of group (*b*) have been variously classified by numerous authors who either fail to distinguish them sharply from the herd-instinct proper, or else are using terms in ways different from other writers. For instance, Rivers emphasizes the sociological importance of suggestion, and he recognizes it under three aspects, cognitive, affective, and conative. Thus we may have suggestion of an idea, of an emotion, or of an action. McDougall, however, reserves " suggestion " for the cognitive aspect only and terms the suggestion of emotions " sympathy," and the suggestion of actions " imitation." (The sympathy here referred to is, of course, " primitive passive sympathy," not the active sympathy which—according to Bain—leads directly to altrusim.) Again the French schools (*e. g.*, Tarde) use the word " imitation " as Rivers does " suggestion," in order to cover the " suggestion," the " sympathy " and the " imitation " of McDougall. As an example of another description of gregarious instincts in this misleading sense we might quote Bartlett's classification into comradeship, assertiveness, submissiveness, construction and conservation, this last being probably another name for Murphy's " fatigue " factor. All these are trends that may be useful to gregariousness, or may result from gregariousness, but they do not tend towards gregariousness.

After this short mention of the ways in which we shall not use the terms " herd-instinct " or " gregarious instinct," we should now proceed to enumerate the attitude of representative psychiatrists towards this instinct, noting the extent to which it has been admitted by them, and the possible application they may have made of it in psycho-pathology; paying regard also to the way in which they conceive it, as narrow or broad, immediate or deferred.

5. The first thing we notice when reading standard books on psychiatry and psycho-pathology is the divergence of the views

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expressed. Coupled with this are two other outstanding features, namely, the tendency to ignore the more precise definitions of scientific psychology, and the failure to avoid too facile generalizations.

It is evidently impossible for us to discuss in detail all the various schools of psychiatry, and we shall have to rest content with a brief survey of the views enunciated by some of the representative authors.

Storring in his lectures on mental pathology hardly refers to instincts at all, nor does Marr; Mott seems to have little use for them, Pierce is equally silent, and Ross in his book on neuroses does not define or stress instincts any more than Hollingworth does. Koffka, the leading representative of the Gestalt school regards instincts as mere chain reflexes; he emphasizes more particularly the kind of instinctive movements performed, and speaks of such instincts as those of cleanliness, adornment, walking, etc. Koehler has much the same outlook.

Cole, in his text-book, describes two instincts, calling them the desire to live and the desire to reproduce; a rather unfortunate terminology, as the idea of reproduction is not, in the primitive mind, necessarily associated with sex (see Malinowski). Craig follows Cole closely, but mentions "derived instincts." Saxby speaks of impulses and inherited engrams rather than of instincts, and denies the presence of gregariousness. Macnamara refers to instinct in general and specifies instinctive actions, but not separate instincts. Hamilton's book on psycho-pathology treats of responses rather from the behaviouristic standpoint, adopts very objective methods, and links on to Kempf's attempts at the "autonomic" interpretations of urges and major cravings.

The Freudian school, of course recognizes two groups, the ego instinct and the sexual instinct. Trotter agrees, but adds a herd-instinct in a broad sense. He regards the herd-instinct as the equivalent of Freud's "censorship," (though as a matter of fact it more nearly corresponds to the "reality principle"). Trotter's herd-instinct is really comparable to Wallas's "social heritage," and it cannot be too emphatically pointed out that Trotter is not describing an actual instinct at all, but a "community attitude." As Gordon says, this instinct is not made to appear, in this view, as a reaction of the individual, caused by instinct, for it merely designates the influence of the community on the individual. This point seems to have been missed by many (*e. g.*, Crichton Miller) who have incorporated Trotter's views with their own. Hart follows Trotter to some extent, and is inclined to trace some forms of mental disorder to the repression of the so-called herd-instinct.

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Rivers agrees with the three-fold scheme, and does make use of the herd-instinct in his psycho-pathology, as when he describes shell-shock as a compromise between ego- and herd-instincts. Sometimes, however, he uses instead of the herd-instinct, the concept of duty as conflicting with the ego trend, considering the sense of duty as a direct outcome of the herd-instinct. This is evidently very debatable.

Tansley gives extensive consideration to the herd-instinct, still in the broad sense, and includes the tendency to gregariousness within it. Suggestibility he ascribes to this tendency towards gregariousness and not—as has been done by others—to the fact of gregariousness. He evinces the old fault of arguing from animals direct to Man. The affective side of this instinct, he thinks, is the feeling of desire to be one with the herd; surely a highly organized concept to be associated with a primitive instinct. He goes on to ascribe the discomfort consequent upon disobeying moral law as due to disobeying the promptings of the herd-instinct, and he describes conflicts occurring between ego and herd, and between sex and herd tendencies. Further criticism, however, is unnecessary in view of the way he uses the term herd-complex as interchangeable with herd-instinct, and in a sense that would agree neither with Freud's nor with Jung's definitions of a complex.

McCurdy resembles Rivers in his views but recognizes narrow instincts too, grouping them under the three heads of ego, sex and herd. Stanford Read mentions a herd-instinct in a vague way; but Culpin, whose viewpoint is similar to Read's, goes rather farther, and definitely postulates a weak herd-instinct as a factor in the production of neuroses.

Stoddart recognizes four main instincts—self-nutrition, self-preservation, sex and herd. This last he describes as "a desire to comply with the wishes and customs of society," and says it is a true instinct. According to this definition it might be anything except a true instinct; the same criticism might be made here as we suggested earlier, against the describing of primitive trends in terms of highly evolved concepts; the simple savage has no instinct to obey society, and the obedience which he evinces may well be due to self-preservation against the punishment for disobedience. It is to this herd-instinct that Stoddart ascribes such traits as modesty and shame, but all through his account he is sketchy and vague and does not seem to draw any sharp distinction between the broad and narrow conceptions of instincts. Norman admits three main urges in a broad way, but makes no

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further use of them except to describe what he calls their perversions. Yellowlees uses the term "herd-instinct" for describing the influence of the herd on the individual, being thus in a safe position for showing how most instincts may conflict with the herd one, but points out that his use of the term, though perhaps inaccurate, enables him to avoid certain complications in his description of mental mechanisms. Henderson and Gillespie recognize the instincts of nutrition and of sex, and as the "so-called herd-instinct" certain later acquired reactions. Their application of it is very limited.

Cobb admits Freud in parts, and mentions conflicts of instincts, but without strictly defining them. Mainly does he emphasize the affective force of fear, anger, resentment and jealousy, thus approaching the narrow conception of multiple instincts. Platt recognizes several instincts and, incidentally, nearly accepts a group-mind, though regarding it as subhuman rather than superhuman in its characteristics. This is probably due to his following Le Bon's description of casual crowds and not of organized groups.

Bleuler is very vague: he enumerates impulses of nutrition, sex, self-preservation, and he adds an "ethical" one; but these seem to play little or no *rôle* in his psycho-pathology. Baudouin accepts a few instincts, including a "social" instinct, but after that says no more about them and follows Freud and Jung in a haphazard way. Jung recognizes patterns of behaviour but traces all innate tendencies to a mental libido corresponding in many ways with Bergson's "élan vital." Adler explains all conduct as an expression of one main urge, the "masculine protest."

Prideaux speaks vaguely of a herd-instinct and ascribes to it the formation of a "social ideal" which seems in a sense to approximate to the "ego-ideal" of psycho-analysis. Brown recognizes instincts of self-preservation, self-assertion, sex, herd, and inquiry; but at times he implies that these might after all be mere class names and be therefore subdivisible. The herd-instinct he defines as the "urge to act in accordance and harmony with one's fellows"; a rather complex tendency, we should say, difficult to conceive of apart from an already advanced conceptual stage of intelligence. Hamblin Smith, following both Freud and McDougall, tries to combine them, and speaks of conflicts between herd-instinct and sex-instinct; though he is careful to point out that the presence of a herd-instinct does not necessarily imply an inborn desire to adapt oneself to society.

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Amongst those favouring the "multiple instinct" view we have of course McDougall, who traces neuroses to the repression of fear; with such as Hadfield and Roback. This last, however, suggests that McDougall's list of instincts should be still further subdivided into even narrower trends. Sands and Blanchard describe eight instincts, including a vague herd-instinct, but their account of them is scanty. Morton Prince seems to follow McDougall fairly closely, although denying the inevitability of the "specific perceptual inlet" factor, and utilizes the idea of conflict between instincts. In connection with instinctive activity, he holds that energy is discharged in three directions, (*a*) to cause the motor movements that will bring about satisfaction of the instinct, (*b*) to initiate visceral changes essential to preparation for action, and (*c*) to inhibit all other contrary instincts.

Sidis disagrees with McDougall and, after emphasizing the importance of fear, does not seem to have much to say about other emotions or instincts, at least not in a systematic manner. Mary Calkins, the self-psychologist, agrees with McDougall only in part, refusing to regard as essential the three "aspects" of instinct; moreover she inclines to consider acts rather than tendencies. Yet Stout, another self-psychologist, follows McDougall more closely.

Core inclines to Jung in reducing the appearance of separate instincts to a primary vital urge. Conflict he regards not as occurring between one emotional trend and another, but as specifically due to environment. (But is this really very different?) He includes under the term herd-instinct gregariousness plus a tendency to "conform and submit," though later on he separates them again and describes the tendency to submit as merely associated with the herd-instinct. Of the three groups of functional disorders described by him (retrogressive, progressive, and instinct distortion), the last is conditioned by the workings of the herd-instinct. Generally, he seems to combine Freud with McDougall in an obscure manner.

From this necessarily scanty survey of the position of the herd-instinct in psychiatry we cannot help being impressed by the diversity of views expressed and the vagueness of conception. And so it becomes incumbent upon us to indicate some of the criticisms that can be directed against the grounds for believing at all in some kind of herd-instinct.

The Herd-instinct and the Group-mind.

1. First let us consider the broad concept of a herd-instinct, one of the three primal urges. The current way of regarding this

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instinct is of the nature of a dynamic force, an active trend to be recognized by the ultimate results that it achieves. There is a growing tendency to include McDougall's narrow instincts as working within these three main trends. As a result, the position is reached of having to recognize urges within urges, all of which—the including and the included—are still designated by the one term "instinct." This way of regarding the matter is obscure and confusing, yet we cannot seek much help from other authors, as this difficulty seems to have been shirked by most of those who have thus tried to combine broad and narrow trends in the same scheme. This difficulty may in part be due to attempting to fuse together ready-made bodies of theories rather than reconsider the whole position.

To me, however, it would seem not at all unlikely that these broad urges only appear as such when we view human conduct in certain ways. How do we know that, because we are pleased, for purposes of exposition, to classify the needs and aims of the race as ego, sex and herd, therefore there must be in every individual three corresponding unitary principles moulding his acts into these three forms? Might not this be an artefact of analysis? It surely does not follow that if we care to divide up conduct and its goals on any other basis—say an æsthetic one—and hit upon a twelve-fold classification then there must correspondingly be twelve unitary principles responsible for all behaviour. One cannot help being keenly aware, albeit in absence of much consideration of this point by standard writers, that these three "urges" may be more the products of our methods and our preferences than symbols of the true facts.

If the concept of "broad" urges is to be retained at all, I would suggest the following considerations as helping towards a solution. If there be a force responsible for the fact that conduct is mainly egoistic, sexual or social, need it be a force that itself urges towards egoistic, sexual or social results? Might it not be a more passive, guiding kind of force, one that regulates or moulds the combinations of such instinctive activities as are postulated by McDougall? If so, it might be compared to the railway pointsman who controls the setting of the lines, these exerting a resisting, passive force on the train in guiding it to a station, but without contributing in any way to the motive power of the engine. What is wanted is some term descriptive of a "configurational" factor responsible for the three main patterns of conduct, a factor that accounts for form in its complex teleological meaning, and which moulds rather than urges, guides rather than propels; in short a factor accounting for

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the " orientation " of complex instinctive activity. It seems pretty certain that such a factor cannot in itself be innate ; it must be moulded by environment, education and all that makes up personal experience.

Even though it be a personal acquisition, it may be regarded as a racial factor that has grown and expanded during the course of civilization owing to education embodying the fruits of accumulated laws and customs. Because of its very comprehensive nature it must be more than a mere complex ; moreover even though it may in part exert its influence unconsciously, yet it can never be entirely repressed, and therefore should not be termed a complex, this term being usually reserved for a repressed and unconscious constellation of ideas and sentiments. If coining a new word is to be avoided I suggest that this factor—and we are speaking of the factor responsible for the socialization of conduct—be called a " system," using the word in the sense given it by Morton-Prince, namely as an integration of sentiments and complexes.

We have next to consider the narrow way, McDougall's way, of regarding the herd-instinct. But McDougall's views are so widely quoted and have attained such an assured position in a section of English text-books, that it might be well to discuss them in their general aspect as well as in respect of the herd-instinct. For this instinct of gregariousness is only a small item in a large scheme, and it cannot carry much conviction if the general scheme of which it is a part is itself insecurely founded.

2. What is McDougall's definition of an instinct? " An inherited or innate psycho-physical disposition which determines its possessor to perceive and pay attention to objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object, and to act in a particular manner, or at least to experience an impulse to such action."

We may now indicate briefly the more vulnerable points at which McDougall's theories can be attacked.

The division of all innate action into three parts—perceptual, affective, conative—is not always possible. It often rests on insufficient knowledge and it leads to a straining of facts in order to fit them in a scheme.

McDougall's definition is sometimes regarded (*e. g.*, by Dibblee) as inadequate, because it does not emphasize the immediateness and completeness so characteristic of true instinctive behaviour.

Even after listing a large number of instincts, to act as prime movers, McDougall still finds it necessary to postulate further

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"innate tendencies" such as suggestion and sympathy. Drever, and others, would be inclined to group these with instincts. It has also been urged that even these instincts are but class names for groups of reactions and do not stand for unitary principles.

This assumption of so many different instincts often provides the wrong kind of explanation, and is only description over again. To use the instance given by Ginsberg: "To say that submission is due to a submissive instinct and negative self-feeling is like saying that people are submissive because they are submissive." This fault has been well described by Dunlap when he says, "You notice a certain common characteristic in a group of phenomena; then you abstract that characteristic, give it a name, and explain the phenomena by saying they are manifestations of that abstraction you have named."

The response of an organism to its environment, in so far as it is an instinctive response, is a response as a whole. As Thouless points out, behaviour caused by this or that limited and single instinct appears rather as a partial response, involving only parts of the entire organism.

Without endorsing the French schools who are so apt to regard emotion as pathological, Shand emphasizes the fact that in many cases of normal instinctive action no emotion is present, or at least it is not subjectively perceived. McDougall himself is far from clear when, after postulating that every instinct involves an "explicity recognized emotion," he goes on to say that such an emotion is always present "whether or not it be clearly realized at the time." Shand, Drever, Rivers and others have shown how emotion is most marked when instinctive action is inhibited, and how, as long as the response can proceed freely, all attention is concentrated on the "doing," emotion being little if at all in evidence. Woodworth is therefore inclined to regard emotion as an internal response in the nature of a reaction preparatory to renewed or altered efforts in relation to the environment. This is much the view of Watson.

For Shand, emotion is therefore not part of an instinct at all, though it may accompany it, and is something separate which like instinct has a dynamic urge of its own. It is not fixed but on the contrary is very variable both as regards its ends and its means.

Even when emotion does occur, it would not appear that these emotions and responses are related to each other, in pairs, in quite the fixed manner that McDougall describes. For instance a

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particular emotion may be found linked to different instincts. Similarly a particular emotion may be associated with different responses, as when fear leads to silence, screams, immobility, shivering or flight. And in higher animals the whole process is subject to the complicating influence of intelligence, making it still more difficult of analysis.

Again, very different emotions may be found with a particular instinctive act. For example, flight may be accompanied by anger, joy, surprise, playfulness, etc. And to say that we are here describing several reactions only one of which is really flight—the kind associated with fear, would mean that we must therefore fall back on the emotional content in order to qualify the act. This must needs confuse the issue and beg the whole question.

In reviewing McDougall's theories on instinct, one cannot help feeling that he has stretched the facts to an extreme degree, and almost manufactured instincts and emotions in order to fit his theory. Thus he sometimes postulates some vague and ill-defined emotion in order to fit a well recognized instinct. At other times he assumes the presence of an instinct that is far from clear-cut and evident, in order to account for a specific emotion.

The very definitions and criteria that McDougall himself lays down are not always complied with in his further descriptions. For instance he regards pugnacity as an instinct; yet it does not appear to have any specific perceptual inlet; on the contrary it is aroused —he says—when other instincts are inhibited.

As regards emotions, he recognizes three varieties, primary, secondary and derived. These last do not seem to be associated with a particular instinct in preference to any other—a serious objection to calling them emotions. Joy, regret, remorse etc., he states, are definite emotions dependent upon the working of any strong impulse " under certain conditions." If these felt reactions were truly emotions in accordance with his earlier conceptions we should expect the " certain conditions " to be of a perceptual order, or due to a conflict of instincts, or to variations in the extent or feasibility of response. But no, these " conditions " turn out to be of a purely ideational order, such as abstract judgment, and it can well be asked whether these feelings are emotions. We know, of course, how Shand's sentiments are organized on just such an ideational basis, and in fact these derived emotions seem to stand in much the same relation to sentiments as primary emotions do to instincts. For want of a better term, I would suggest that these " derived emotions " be designated as " sentiment-tones."

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Finally, it may be argued that conduct in civilized man is not interpretable in terms of single primitive instincts only, for it is not merely a balance of inherited trends, but a new synthesis involving new adaptations. "Very little in man is pure instinct; heredity operates in interaction with capacity to assimilate, foresee and control" (Hobhouse).

3. From this brief summary of criticisms, we see how McDougall's general theory of instinct is not always agreed to by other authors, and how, in places, serious difficulties are encountered in reconciling his views with the facts. Now, many of the arguments outlined against his general theory apply equally well to his instinct of gregariousness; but a few more specific points might be touched upon as affecting the herd-instinct in particular, this instinct which impels to gregariousness, in which McDougall almost implies a trend towards organization, and which, he says, enhances other instincts.

As regards its affective aspect, there seems to be no specific emotion associated with the gregarious instinct, unless perhaps it be loneliness. Many psychologists, however, have shown how this is too complex to be regarded as a primary emotion. It is strange, too, how this emotion, picked for linking with the instinct of gregariousness, is just the one that shows itself in the absence of gregariousness—when the animal is not being gregarious; this is quite opposed to what obtains in the rest of McDougall's scheme of instincts, and we are still left to ask what is the emotion associated with the functioning—as compared with the lack of functioning—of this instinct.

As observed in the human subject, any satisfaction at being one of a crowd may well be due to factors other than the urge of a primitive instinct. For instance, it might be due to desire for recreation, for collecting or imparting news, for self-preservation, for an outlet for exhibitionism, for finding an anodyne for troubles and worries, and many other, we might say, intelligent reasons, rather than to an instinctive impulse. In fact, a sort of intellectual pragmatism will account for herding, the individual seeking the herd from conscious appreciation of the advantages that can thereby be gained. Moreover any satisfaction in herding appears enhanced through the operation of sympathy. Much of the evidence upon which a herd-instinct rests has been culled from animals—as have many theories concerning instinct—but is it safe to argue that acts performed by animals under the influence of an instinct cannot, in man, be due to a multitude of other causes?

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Men sometimes behave just like animals, though for very different reasons.

Actually this question is intimately bound up with the very complex problem of intelligence, which is said to grow within the sphere of instinct, decreasing the rigidity and fixity of instinctive activity. Thouless describes intelligence as instinct modified by thought, and allows that even the capacity to reason may also be innate. According to Myers, behaviour as seen from within, subjectively, is purposive and intelligent; but when viewed from without, objectively, it is mechanistic and instinctive. Although some deem it advisable, if only for methodological reasons, to consider instinct and intelligence as two separate principles, yet it must be remembered how the one leads to the other. Stout describes how, after the first stage of perception and instinct activity, comes the second stage, the one of free ideas, with memory and anticipation, leading to desire. (Hobhouse's "impulse qualified by an idea.") In fact the stage of sentiments, where new ends appear, distinct from the ends of primitive instinct.

And to oppose intelligence to instinct too sharply creates further difficulties. For instance Read, though agreeing with Drever that all (in man) instinctive behaviour includes intelligent factors, yet denies that all intelligent behaviour includes instinctive ones. Stout too maintains that intelligent behaviour need not be instinctively determined. The problem now is that there appears no motive force behind intelligent action once the instinctive urges have been denied co-operation; unless, of course, we fall back as a last resort upon the reduction of all action to a mere *élan vital*. In any case, it is the growth of intelligence, with the modification of ends and means, and the conception of these means, that vitiates any arguing from lower animals directly to higher man.

We need go no further in order to see how the herd-instinct, as conceived by McDougall, raises many complex questions, becomes a fruitful source of controversy, and leads to no irrefutable conclusions.

4. Before turning to the discussion of certain other considerations in connection with theories of society, we should examine another concept sometimes invoked in social psychology, one with which the theory of a herd-instinct seems to me—though not, apparently, to others—to be indissolubly linked. I am referring to the possibility of there being such a thing as a "group-mind." The presence of a group-mind would go far towards answering the question: "To what end a herd-instinct?" or, to put it more comprehensively,

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" for what purpose are herds formed through the agency of a herd-instinct ? "

Of course the idea of purpose has not always been well-received in science, at least not in mechanistic science. It has, it is true, had its place in biology, physiology, etc., as when we say that the larynx and its motor mechanisms are " for the purpose " of speech, or that the heart valves are " for the purpose " of preventing regurgitation, but this is only purpose viewed in retrospect ; it is only a way of describing " useful results," without commiting ourselves as to how much these results may be accidental or sought after ; or how much they may have determined the events leading up to them.

If we define purpose as the " stable forms and configurations towards which differential stresses tend," we may, as we have said, regard it as mere result that has just " happened that way " ; but we may, too, view it as a teleological factor that has a definite influence upon the course of an evolution that many authors are now beginning to regard as purposive (*e. g.*, Noble) ; or, as Lloyd Morgan would put it, purposeful. He uses the word "purposeful" to imply the presence of "design," or predetermined "ends," in the mind of some agent or "doer"—here, and in the metaphysical sense, God—and reserves the word "purposive" for the causal and mechanistic interpretation of purpose; for, as Joad reminds us, whichever way we regard development of any kind it implies advance, advance implies direction, direction implies a goal, and therefore purpose. Even when not explicitly enunciated, the concept of purpose appears clearly implied in some of the recent accounts of that " emergence " which was first stressed by Alexander, Broad and their followers. Purpose may act as efficient cause in the sense that it conditions the stages preceding its achievement ; in other words, a particular emergent is to be regarded as conditioning the processes leading up to its emergence, just as much as being an inevitable result mechanistically determined. Adopting such a teleological view of nature we would describe an instinct not only as tending towards an end but also as being itself partly determined by that end.

Applying this to our subject, we would ask " what is the goal towards which the herd-instinct tends ? what result—or emergent —is to be found that will be a sufficient justification or ' condition ' for a herd-instinct ? " And if we do not recognize a group-mind, that can thus be regarded as the goal, then our herd-instinct becomes but a barren and aimless thing, with no end to determine it. Or,

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if we admit a group-mind, then we cannot consider it as a mere incidental or side product of evolution, as a result that might just as well not have happened; it must have been led up to; some urge must be postulated tending toward the emergence of a group-mind; an urge that "seeks" (we cannot avoid anthropomorphic expressions here) after some such higher end. And a herd-instinct is what is required to supply the answer.

So it seems to me that these two concepts, herd-instinct and group-mind, must to some extent stand or fall together, and any refutation of either will do much towards weakening the position of the other.

5. The idea of the integration of human minds into something higher and all-inclusive is new neither in religion nor in philosophy, whether that higher something be conceived as a unitary super-human mind or merely as an extra-individual psychic continuum. From the standpoint of modern biology it is of more recent application, though it was suggested by Bernard as far back as 1911, in his valuable but little known work. A higher, super-mind gives meaning to evolution when regarded from the point of view of progress. Without embarking upon the problem of life and value, we may remind ourselves how we are generally agreed that any step forward in evolution is to be considered a "good" step; any development that leads to psychical progress and integration can usually be described as an improvement with positive value.

Bernard divides all evolution into five periods, the change from each to the next being dependent on a process of aggregation such as occurred, for example, when unicellular organisms first colonized to produce multicellular animals. And in the fifth period, in which man is found, it is no longer possible to conceive of any likely physical aggregation that could continue the line of progress any further; and so we are left with the possibility of psychical aggregation instead. The urge towards such aggregation, making another evolutionary step possible, would be our "instinct of gregariousness." The new organism thus produced must therefore be a psychic one that transcends its component units, and so must be something such as we might call a "super-mind."

If this super-mind be considered as nothing more than the sum of human minds, with no new faculties or characteristics of its own, then it is a concept of little value and application, and is not in keeping with present views of emergent evolution. More usually, however, it is regarded as a definite emergent, with new qualities that distinguish it from the individual minds composing it. Let us

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be clear, though, as to what we mean by " new " ; the word " new " as applied to emergence can only mean that sudden qualities have come to light which were potentially present in the constituent parts; for as Joad says, " New . . . must mean that our perception of the qualities is new, not the qualities themselves. If not, then these qualities must have existed separate from the constituents of the compound, and so to speak *in vacuo* in the universe, *i. e.*, as ' objects for thought ' even if not ' objects of thought.' "

Who is to say, however, what degree—qualitative or quantitative —of aggregational synthesis is necessary for the emergence of such a super-mind ? If such aggregation be regarded as anything short of the whole human race, then at what point does this mind first show itself ? If, on the other hand, it be made to include all humanity, then it becomes very much more comprehensive than what social psychologists have been pleased to call a group-mind.

But whichever way we regard the matter, the fact must be faced that we are inevitably limited in our speculations, our views are doomed to incompleteness and inaccuracy, simply because the part can never conceive of the transcendental whole. No human mind is capable of apprehending a super-mind of which it is only an infinitesimal part; it can never have direct cognizance of it, even though it may speculate about it. We are like the little consciousnesses that older writers used to postulate as occurring in single parts of the brain, which were naturally and inherently unable to appreciate the consciousness of the whole brain.

Moreover, just because this super-mind is an emergent, it must be possessed of new qualities and powers foreign to a human mind. This would prevent us at the onset from knowing those very facts about a super-mind that distinguish it as a super-mind. Just as primitive man fashioned his gods after his own image, so are we left to conceive of a super-mind after the model of a single human mind, unable to ascribe to it anything more than intensified and glorified human characteristics. This, however, need not debar us from thoughtful consideration of the subject, within the limits of our understanding, and in spite of the difficulties which we must, in the very nature of things, encounter.

6. Lazarus has described the aim of folk-psychology as being " to discover the laws that come into operation whenever the many live and act "—he does not add " think "—" as one," and the postulation of a group-mind to account for some of these laws is an integral part of McDougall's theories. Just as he sees evidence for a gregarious instinct in the fact that " we behave differently towards

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those of our own group " (Giddings) so does he deduce a group-mind from the way each unit displays properties and modes of reaction not present if he remains outside the group. He is supported in this by some other authors, for example, Barker, but on the other hand such writers as Ginsberg, McIver, and Urwick, have totally rejected his theories.

This group-mind seems to be conceived by him as occupying a position intermediate between two extremes. The very emphasis he places on the way that men act and think in groups differently from how they act and think alone shows that he does not quite consider a group-mind as a mere addition of units, as a sum of individual minds; he implies, more than once, the presence of some emergent. On the other hand, in so far as he calls it a group-mind and bases its presence on the formation of groups (and not one group), he is considering it as falling very far short of a synthesis of all human minds; it is, in fact, composed only of some-at-a-time human minds.

A serious difficulty at once arises here. When a man is a member of several groups, are we to presume that his mind contributes to the formation of several group-minds? Surely this would lead to such " overlapping " of group-minds that they could no longer have attributed to them that sharpness of individuality usually associated with our idea of a mind; they could no longer be distinguished from one another without creating an artificial separation. Of course, McDougall's description is so much based on his study of organized groups that fundamental factors are very apt to be obscured altogether.

The idea of a group-mind is not, however, peculiarly McDougall's; it is to be found in much earlier writings, though under a different label. We have Rousseau's theory of " General Will," and Hegel's " Folk Soul "—a kind of mystical group-mind. A reflection of this is present in Savigny; and again in the " Collective Consciousness " of Renan, where Hegel's absolute is implied. Hartmann, and Fechner, also give consideration to this subject. Espinas, Durkheim, and Wundt, put forth the same idea but call it " Social Consciousness," and they too conceive it as something that is shared by the whole group.

An important fallacy of the French school must be noticed here, one due to a tendency towards making too sweeping and facile generalizations. When Durkheim (even without admitting a group-mind in McDougall's sense) describes his " collective representations " as aggregates of " individual representations "

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compounded into something transcendental, superior, and definitely more good and aware of good, he is confusing process with content, just as Espinas does in the case of his "social consciousness." What is really shared is not the process of being conscious or aware, but the contents of such awareness, the ideas and images present in consciousness. "Sharing" here is in relation to similarity, not identity. When a man is having the same meal as another he may be said to be sharing it, but it does not mean that they are both chewing the same morsel of food; it is merely that they are partaking of similar food at the same time. It is interesting to note how the French writers—who are so near to McDougall in some of their views—reject the group-mind in which he believes, while subscribing to a social consciousness which he denies.

A good deal of the difficulty found in trying to harmonize these different views lies in confusion of terms and paucity of concepts for mental processes. Anyway it does not seem likely that a super-mind can, at present, be postulated with enough security to provide much support for believing in any marked instinct leading up to it.

In any case let us not be misled into seeing, in the fact that some of the reactions of groups cannot be described except in terms of mind, an argument for a collective psyche. For as Ginsberg says "True, we can only discuss society in terms of mind, but it no more follows that society is, or has, a mind than that a house that consists of bricks is itself a brick."

7. Our next step must be to give brief consideration to some theories of society, pointing out in particular those phenomena that are so peculiar to group life, so unlike what is found in the case of the isolated individual, that they have probably been markedly influential in the acceptance by psychologists of such new concepts as herd-instincts and group-minds. Further we should see how these phenomena have nevertheless been explained by some investigators without having recourse to any new principle outside individual psychology.

The whole question of group mentality is intimately bound up in the broader one of mental evolution. The customs of primitive tribes have always been a rich field of inquiry when elucidating the genesis of early social organization; but the use to which the material thus obtained has been put has varied considerably in different schools. We need only refer to the controversy that is even now active between the "psychological" and the "diffusion" theories. According to some, myths and rituals have arisen all the

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world over as the products of primitive mind, wherever that mind was to be found. Elliot Smith, however, maintains that these have really originated in one portion of the world only, probably from the pre-dynastic Egyptians, and have thence been spread to the other nations of the earth by the wandering tribes that Perry has called the "Children of the Sun." The other races have merely accepted and perhaps modified the beliefs and customs thus brought to them. This view makes one wonder, nevertheless, why these pre-dynastic Egyptians should have been the only ones apparently capable of evolving myths, to the exclusion of all other races.

A rather different explanation of ritual has been offered by Beck. According to him it is not only a question of handing down custom, for it involves a re-interpretation. Dogmas and religions are re-interpretations of once useful practices that have survived from mere inertia (compare the "conservation" of Bartlett and the "fatigue" of Murphy). The social merging consequent upon the sharing of primitive ritual has been regarded as the starting-point for organized social feeling and for the subsequent uniting for the common good. McCurdy, however, believes this merging for common good to have its prototype in the harmonious principle which he attributes to the foreconscious and which he calls a "unity complex"; this would account for the "quest of unity" of Murphy, and—as a beginning of a social urge—would in part correspond to Hobhouse's "effort at synthesis."

It is evident then that there are to be found in social psychology many suggestive points of view which, if sufficiently justified, might well do away with any need for a herd-instinct or group-mind. The multiplicity of lines of approach and methods of description, however, have made it very difficult to assess some of these theories at their proper value. The various accounts given of society have differed from one another largely owing to the bias of their authors and the particular fields they have investigated. For example, some describe more particularly primitive hordes; Le Bon's work is based on what one might call casual crowds, Malinowski has concentrated on early organized tribes and McDougall on more specialized groups. In addition, the several views offered are each apt to be heavily coloured under the influence of some pet principle or tendency emphasized by individual authors. Thus "telepathy" is all important in Newland's views, whereas in France and Germany we find "collective consciousness" being constantly invoked.

McDougall makes remarkably little use of the very instinct of gregariousness which he has himself postulated, and most of social

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feeling he regards as derived from the parental instinct, just as altruism is. This early appearance of other-regarding trends is much stressed by him. But it is very debatable how much one is justified in making any sharp distinction between self-regarding and other-regarding instincts when discussing the genesis of primitive groups, for this distinction seems to belong exclusively to a fairly advanced stage of development, and we must not ascribe to the primitive mind concepts that we have ourselves fashioned when viewing history in retrospect. Compared with McDougall, Trotter lays much more stress on the herd-instinct, regarding it in the "broad" way; but, as was mentioned before, he spoils his theory by including in his description of this instinct a host of reactions that are really the result of the influence of the community on the individual.

Imitation has been postulated as an instinct by Baldwin, but he is not followed in this by the English school, who see in imitation too many diverse mental processes to call it an instinct. The French, however, do so regard it, and nearly all their interpretations of society have been in terms of their suggestion-imitation theories; instance Bagehot, Tarde. Psycho-pathologists too have emphasized the importance of suggestion, *e. g.*, Rivers, and Sidis who says that "suggestibility is the cement of the herd" (suggestibility, not, we note, the herd-instinct). "Man is a social animal, but he is so because he is suggestible." Suggestibility is specially in evidence in casual crowds that have come together under the influence of two factors—(1) Community of focus of attention, (2) homogeneity of constitution and sentiment. The results accruing from such casual crowd-formation have been taken by some as affording indirect support to herd-instinct and group-mind theories, and are as follows: (*a*) Heightening of emotion; (*b*) freedom from restraint and loss of feeling of personal responsibility, especially in respect of the "lower" emotions; (*c*) a lowering of intelligence in order to include the standards of the lowest units of the group; (*d*) Le Bon adds a state of fascination resembling hypnosis; (*e*) increased suggestibility, probably due to an overflow of energy from an excitement that is not always able to find direct outlet. McDougall shows how there may be a reappearance of individual and moral traits in the group, but not until it has become highly organized under the influence of five or six conditioning factors described by him.

Another characteristic of group life that distinguishes its psychology—in the undeveloped state—from that of the individual is the one that has been so stressed by Levy-Bruhl, namely the

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phenomenon of "participation mystique." This is a tendency for the savage to ascribe identity between objects or people that are similar or else enter into close relationship with one another; and this in conjunction with "collective representations" he uses as the basis of his exposition of what he calls primitive mentality. Unfortunately he regards the primitive mind as of a peculiar kind, essentially different from the civilized mind, not even to be compared with that of a growing child of to-day. Most English authors, *e. g.*, Murphy, Marrett, McDougall, disagree with him and regard the mind of the savage merely as an undeveloped mind, not one that is inherently "different" from modern minds. Especially do they dissociate themselves from Levy-Bruhl when he goes as far as ascribing to the savage a clear realization of these two phenomena, comparable to our conception of them.

8. The Freudian school have already made valiant attempts at explaining some of the customs of primitive society along psycho-analytical lines. The laws of taboo and totemism have been traced back to a series of reactions that are typical of family life, reactions based on a universal œdipus-complex and revolt against the father. This is exemplified by the attitude of the members of the tribe towards the Old Man of the tribe, and Freud follows these family patterns into the more complex organizations of tribal life. Against this view it has sometimes been urged that tribal life may have preceded, not followed, the origins of family life; and when we remember how Freud's explanations are based on a necessarily patriarchal system of society, in spite of the fact that many workers have seriously questioned whether matriarchal organization did not appear even earlier than the patriarchal one, we see that his explanations are not always founded on uncontroversial grounds. In connection with these views it is interesting to recall how Burrow denies the œdipus-complex. Instead he invokes a "primary subjective phase" in which the child regards its mother as part of itself. This is not a case of sex attachment to the mother as an object; it is rather that the child has not yet learnt to distinguish the maternal breast as distinct from its (the child's) own body. This "primary identification" he believes to be still operative in the unconscious of adult life.

As regards modern sociology, some writers have found support for the group-mind theory in such collective reactions as communism and anarchism, whereas these are regarded by other authors as kinds of "racial neuroses." Here again the psycho-analysts have not been slow in coming forward to explain the facts on their own

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hypotheses. For instance Kolnai traces the rise of socialistic thought to the same old revolt against the father. Pure communism is a partial regression to the mother with suspension of the father or authority principle. Anarchist communism goes further and leads to a permanent abolition of all laws without the subsequent erection of new ones; its success has been due to its expressing the œdipus-complex more fully and involving (in an implied reunion with the mother) the principle of common origin and therefore of universal brotherhood, with resumption of the infantile level where all personal autonomy is repudiated. In comparison, anarchist individualism is less satisfying psychologically, as it follows the œdipus trait only as far as the overthrow of the father, and does not include regression to the lower levels of irresponsibility. It proclaims, not the bondage of brotherhood, but the freedom of bolshevism and personal responsibility.

As regards some of the characteristics of crowd psychology, Freud also explains these by applying his well known theories. He regards the increase of suggestibility as a result—not a cause—of crowd formation, and the effect of "contagion" (Le Bon) may well be only secondary. The factor that he uses as a key to the whole situation is the community of interest (McDougall's "focus of attention"), and this he derives from a common attitude towards some person or object outside the group; he instances the group leader as being such a person, prominent examples being the Army and the Church with their respective heads, the Chief-in-Command and Christ. This community of interest leads to a process of identification of the members of the group with each other. Identification can occur (1) as part of an œdipus situation, (2) as a substitute for object-love, and (3) owing to the sharing of a common emotional situation, this last being the one prominent in group-formation. The original primal father (the old man of the tribe) enforced taboos sexual and otherwise on the tribe, hence the instincts-inhibited-in-their-aims that resulted formed the basis of the beginnings of tender feeling for the leader; and a re-edition of this situation is what is found in ordinary crowd psychology. If by any chance these tender feelings for the leader were suddenly disrupted and the corresponding libido set free, anxiety would appear and panic result (this is a very different explanation from McDougall's account of tender feeling and panic). The further growth of the crowd, or herd, or group, may lead to each member also identifying himself with the leader, for example in the Church as compared with the Army. This leads to a replacement of the

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individual's super-ego by the person of the leader, which would explain the lack of critical faculty (the old super-ego being in abeyance), the suggestibility and the heightened emotion. This can be compared with a nearly similar process in hypnosis and—if mixed with direct libido as well as instincts inhibited-in-their aims—in the state of being in love; here one might find an explanation for the "state of fascination comparable to hypnosis" mentioned by Le Bon. In later stages still we may get introjection, in substitution for the super-ego, of an idea instead of a personal object, so that an abstract ideal may come to take the place of a concrete leader.

Coming now to the "collective representations" of Levy-Bruhl, found also in Piaget; these are ideas of objects to which traditional sentiments of awe, fear, respect, etc., have been attached. They might be explained as having their roots in that part of the unconscious that Jung calls impersonal or collective. In so far as they are not wholly determined by education but appear to be bound up in the heredity of the race, they would correspond to his "archetypes." And because they are general and collective, they are possessed of a kind of universal validity that is responded to by all, even when unconsciously apprehended. When viewed from the angle of inherited engrams these would come within the scope of Rigano's "biological memory." The phenomenon of "participation mystique" might also be explained on much the same grounds, especially as the archaic "thought-images" of the collective unconscious naturally tend to symbolic and mystical expression.

As regards the "moral consciousness" emphasized by Rashdall, and the growth of conscience generally, Green points out that "no individual can make a conscience for himself; he always needs a society to make it for him." Nevertheless, the appearance of conscience can be regarded as a reaction of the self to environment, reinforced by influences from the super-ego that is formed during childhood and in family life. The psycho-analysts would therefore not regard a conscience as a phenomenon limited to group organization as such, but merely as due to the fact that no individual ever leads a completely isolated life.

The "telepathy" of Newlands might seem capable of explanation to those who are inclined to accept Geley's theories. He develops a view of libido or energy which he calls dynamo-psychism, comparable in a way to Schopenhauer's "will," but not—like it—the necessary cause of all things. He believes that the unconscious is

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the seat not only of lower functions but of higher ones too, and that these latter are purposively kept in abeyance during normal life. We forget, he thinks, because too much knowledge would do away with the spurring to further efforts so necessary to adaptation; a sense of limitation and deficiency is required before progress can be sought after and achieved. When such limitations are removed through their becoming unnecessary, as for example in impending death, then new faculties appear from the unconscious, the mind becomes much clearer, sharper and more all-knowing, and as a result certain manifestations such as clairvoyance and telepathy may occur.

Summary and Conclusion.

To summarize this short discussion: we have seen how complex is the subject of instinct generally and how the views concerning it are still widely divergent. There are many ways of conceiving of a herd-instinct, and in psycho-pathological works this instinct is ill-defined, vaguely described and variously applied—if applied at all. On examining more closely the grounds for believing in a herd-instinct, it appears that they are not always secure, either as regards the herd-instinct itself or in respect of the general theory of which it is a part. Further, this concept is linked to that of a group-mind, and not only is the evidence for the latter controversial too, but the very limitations of human understanding vitiate our speculations concerning it. We have further given a rapid glance to the ways in which certain phenomena that are so peculiar to group psychology as to afford a basis for the postulation of a herd-instinct or group-mind have nevertheless by some schools been explained without having recourse to such postulation.

The time has now come for us to conclude; but we have so vacillated from side to side, picking up one theory and then dropping it for another, considering this and that view only to point at its insecurity, embarking upon a promising trail without the necessary time to follow it up, that we are hard put to enunciate any but vague and tentative conclusions. We might, however, advance the view that a herd-instinct may perhaps exist as an innate tendency towards gregariousness, but that it has become so modified in man, and obscured in its real effects by the growth of intelligence, that it has become a factor of diminishing importance. It would certainly be unjustifiable to ascribe to it such further qualities as might necessarily urge towards the organization of groups or the innate

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observance of custom and law, since these can well be accounted for on other grounds. We might retain in addition the concept of a herd-system, but even this should not be taken too literally and should be regarded as a descriptive facility, a fiction of the " As If " type of Vaihinger, applied to the appearance of unitary urge occurring when the single and separate instincts are combining and acting together in complex ways to produce those results we are agreed to call social. At the most might it be regarded as an orientating factor, acquired through education and therefore not innate, which moulds conduct without producing it, and is not endowed with any such dynamic force as is ascribed to instinct.

Finally as regards psycho-pathology, there is little need in it for a mere instinct of gregariousness and as to invoking any broad herd-system as a factor in mental derangement, it would be regarding this factor as much more unitary and definite than it really is, and the very comprehensiveness and complexity of construction of such a system would make it too unwieldy for clinical explanations. Last but not least it would introduce still more complexity in those " mental mechanisms " that are already too numerous and ill-defined.

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DESCRIPTION OF PSYCHIATRIC AND ALLIED ACTIVITIES SEEN ON AN AMERICAN TOUR.

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INTRODUCTION.

THE shortness of the tour allowed only a limited number of places to be visited, and the salient and most distinctive features of psychiatric and allied activities in each to be seen. These included general and mental hospitals, psychiatric clinics and reception units, observation wards, mental deficiency institutions, mental hygiene centres, child guidance centres, including nursery schools, and child delinquency work associated with juvenile courts, etc.

Some were studied from an expert point of view; others, though of great interest, received more general consideration.

The principal places visited were Montreal; Toronto; Chicago and district; Boston, Worcester, Wrentham and other places in Massachusetts; Washington; Baltimore; Philadelphia; Yale University at New Haven, Connecticut; and New York City and State.

QUEBEC PROVINCE.

No mental hospitals were visited, but these were stated to be backward and in need of improvement.

There are two general hospitals, one for Catholics and one for Protestants. A Jewish hospital is being added.

There is a similar religious division in psychiatric activities. This is typical of the whole province, and handicaps any attempt at advancement and co-ordination. I was informed there are similarly two school boards.

There is no compulsory education and no organized Poor Law Service, but the Province has 57 hospitals and maternity homes, crèches and tuberculosis sanatoriums, dispensaries, orphanages, refuges, etc., which, including the mental hospitals, cost over £3,100,000 annually.

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Mental Hospital Service.

There are five public mental hospitals and one private, which includes Quebec City and Montreal. Four of the public mental hospitals are Catholic and one is Protestant. They contain 6,724 patients (3,400 men and 3,324 women); 1,744 were admitted during 1927, and 1,464 discharged.

The cost is $286 per patient, being almost 25*s.* a week per patient, which is about the same as in other Canadian mental hospitals.

There is a total of 1,240 staff, of which 880 are nurses and orderlies—a proportion of nearly 1 : 8 patients. There is a total of 35 doctors and house physicians—a proportion of 1 : 200.

Mode of admission.—This is similar to English practice, but more elaborate. Private cases require the following forms to be filled in: statements by relatives, two physicians' certificates and the history. A judge is called in if there is opposition.

Public cases require certificates from (1) a relative, (2) a physician, (3) the mayor, (4) the treasurer, (5) the parish priest.

A report under oath, corresponding with the admission notice in England to the Board of Control, is required to be sent by the medical superintendent to the Provincial Secretary within three days from the date of admission.

The medical superintendent can receive "urgency" cases without all five certificates, but he has to complete them within fifteen days. The medical superintendent's decision to receive is necessary. The person making application can have the patient discharged unless a barring certificate is given.

The medical staff of each institution consists of a medical superintendent, a deputy superintendent, two heads of service, two assistants, a surgeon, a pathologist, a dentist, and an ear, nose and throat surgeon.

There is a lecturer in psychiatry at McGill University, and an associate lecturer who conducts researches in the University and consults at the Montreal Hospital. Although the University and Hospital are well known for their high efficiency, no other special development in regard to psychiatry appears to have taken place.

Mental Hygiene Movement.

There is a branch under the direction of Dr. Mitchell, of the Mental Hygiene Organization, and in his absence its work was described to me by Dr. Silverman. It runs a clinic and conducts

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a certain amount of propaganda work. People are seen by appointment, and difficult and defective children are adjusted. Money for this is now provided from a City fund, which is collected annually from all charitable and social agencies, and divided among them according to importance and needs. The Mental Clinic has no beds. It gives advice unofficially at the local Juvenile Court.

Nursery School.

The nursery school is for children of the professional classes, the ages ranging from 2½ to 4½ years. Children are studied, maladjustments corrected and records kept.

Province of Ontario.

Toronto (102, College Street) is the headquarters of the Canadian National Committee for Mental Hygiene. The Province has also a well-organized mental hospital service, including a reception hospital situated in the University quarter of Toronto. There are also well found nursery schools and child study and guidance activities associated with the University.

Mental Hospital Service.

There are twelve mental hospitals in the Province, including a mental defective institution housing 1,362 and a criminal establishment with 119 patients. The total number is 9,656. The hospitals vary in age from Toronto, opened in 1846, to Whitby opened in 1920, and also in size from Woodstock containing 193 to Whitby 1,569 patients.

The cost ranges from $.75 to $1.24 a day at Kingston. The average cost is about a dollar per day, but the defectives only cost $.66 a day or about £1 weekly as compared with mental cases costing about 35*s.* weekly.

The admissions for 1927 totalled 2,066, of which 1,524 were first admissions, 1,420 on physician's certificate, 461 on inspector's warrant, 5 (criminals) on the Lieutenant-Governor's Order, and 180 voluntary (113 male and 67 female) constituting 8·7% of the whole.

It will be noticed that the bulk of the patients are admitted on physicians' certificates, and a comparatively small number are voluntary, a proportion, however, much higher than in public mental hospitals elsewhere.

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Discharges and deaths number 2,029: recovered 398, improved 703, or together, more than 50% of the admissions; unimproved, 121; not insane, 37; transferred, 95; died, 675, *i.e.* 7%.

It will be noted that the number of cases discharged is high.

Modes of admission.—(1) To the psychiatric hospital:

(*a*) As a voluntary boarder on an application countersigned by a physician as to the patient's suitability. The patient promises to co-operate in treatment and to pay the weekly cost.

(*b*) On certificate by a physician recommending admission for observation and treatment. Certificate by relatives and a guarantor as to maintenance, and, if found necessary, the cost of committment and of the patient's removal to a State mental hospital.

(2) To provincial mental hospitals:

(*a*) *As a voluntary boarder.*—This is limited to a period not exceeding one year, and on the following conditions: the patient has to give five days' notice of his intention to leave and agrees to submit to the rules and discipline of the hospital. The application must be accompanied by the physician's statement of the history and prognosis.

(*b*) *As a committed case.*—The application has to be accompanied by—

(*a*) A physician's statement of the history.

(*b*) Two physicians' certificates or a warrant by the Lieutenant-Governor.

(*c*) A statement of patient's means for the Public Trustee, who controls all committed patients' estates.

(*d*) A guarantee for maintenance from a relative except in the case of an indigent patient.

Toronto Psychopathic Hospital.

This is a unit of 60 beds serving a population of 700,000. It is situated in the University and Hospital zone of the City, and is under the direction of Dr. Farrar, the Professor of Psychiatry in the University of Toronto. He is assisted by three resident doctors and three student interns. It has been comparatively recently opened and has the usual fittings, and there is a large out-patient department.

Sources of admission.—40% of the cases are referred from the

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police courts for observation, and include cases of abnormal conduct, street vagrancy, etc. Other cases are brought in for observation on a certificate signed by a doctor, and others are from the out-patient department. Alcoholics, drug cases, feeble-minded, senile, tuberculous and epileptic patient are not received. Persons on ticket of leave and on trial from mental hospitals are also entertained. Court cases stay for a week, but can be extended for a number of weeks, or even for two or three months.

Like all these clinics, it is doing valuable work.

Whitby Mental Hospital.

The most modern mental hospital in the Province—that at Whitby—was visited.

It is a well-arranged hospital of 1,569 beds on the colony plan, the villas being grouped around a central area. As in American mental hospitals there is a plan model in the hall of the administrative block, which is of great help in enabling visitors to find their way round the building. Cases are received direct or through the psychiatric hospital, and number about 400 a year, of which about 50 are voluntary admissions.

The nurses, as is usual in Canadian and American mental hospitals, attend a general hospital for a period (in this case six months) and take the General Nurses' Certificate of the Province. There is a comprehensive syllabus both for instruction and examination.

The cost of patients' maintenance varies from a dollar a day up to $1.25 and, as usual, the wages and salaries account for more than half of it. Owing to the 12-hour daily tour of duty the proportion of staff to patients is fewer than in some places.

There is a good occupational therapy department occupying a separate pavilion.

Cafeteria system.—This is practised here only so far as it means a certain method of serving food. Patients who are capable come to the central kitchen and file past the service counter, receive their portions on a tray, and then go to a seat in the contiguous dining hall. The giving of a choice of food, which by avoiding waste is the great advantage of the system, is not practised here.

Table-cloths are not used, but the table surfaces are polished with a hard and brittle preparation called "Valts Spar." Paper napkins are used in some places, and, while stated to be expensive, find favour in America.

There is a club house under the large hall. The patients

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attend during the day to play billiards and bowls, and patronize the canteen, where various articles, including "soft drinks," are supplied. At night it is used by the staff. The whole arrangement appears to work well.

The kitchen and laundry are modern and efficient, as would be expected in a new institution.

Canning industry.—Canning is extensively practised at Whitby. The plant is lent by the American Canning Co. for $75 a year. Rhubarb, pineapple, peaches, pears, and grapes are canned at a cost of 35 cents a gallon can, and corn, beans, peas and beets at a cost of 7 cents per gallon. Only 3% of material is stated to be wasted. The canner is a self-taught immigrant from Lancashire. This industry appears profitable and desirable. In England most of the raw material could not be raised at a sufficiently low rate to justify experiment, even if the canning plant were obtainable. Further, I am informed that most attempts to learn involve, in the early stages, at least 25% of waste.

Child Study in Toronto.

This is comprehensive and ambitious, and took root from the research work of the Psychological Department of the University under Prof. Bott. The study is being developed in co-operation with the Education Department. The investigations cover infancy, and are continued through the ordinary and high-school age to the university level.

Studies are being made in four crêches and in an infancy adoption home. There is also an excellent pre-school clinic or nursery school.

Some 1,400 average children are being studied at the school age, and observations on adolescents at the high school age are to follow.

The Nursery School aims to take children who have records from birth, and studies them from 9 a.m. to 3 p.m. for 36 weeks.

The objects are to look for symptom-complexes, mainly prognostic symptoms. It is hoped that at the end of ten years it may be possible to lay down a mental hygiene prognosis and service, like the physical school inspection services.

The various "services" comprise playground, playroom, dining-room, workshop, toilet and sleeping.

Parent guidance is included and meetings are held every fourteen days, when efforts are made to induce parents to realize their possible errors. Teachers give their services free, and meet and

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discuss clinical problems. Lay leaders are appointed and are taught when to consult the psychiatrist.

Mental Hygiene Department.

This department is run by Dr. Hincks, who collects funds and organizes the work throughout Canada. He collects about $140,000 a year and has four permanent and thirty-nine temporary assistants.

The funds come from wealthy foundations, such as the Rockefeller ($30,000) and the Rosenwald Foundation ($12,500). The Government contributes $20,000 and the Provincial Government $15,000; Life Assurance Companies, who recognize the importance of the work, give $30,000; and the balance is made up by private subscriptions.

Illinois.

In this State I visited the Chicago Psychopathic Hospital, the Chicago Child Guidance Institute, which contains complete pathological and psychological sections, and Elgin County Mental Hospital, the most typical modern institution.

Child Guidance.

The Child Guidance Institute, under Dr. Herman Adler, was started as a juvenile delinquency department and has gradually developed towards normal psychology. It also studies problems in neurology and psychiatry. There is a sociologist, who studies the influence of environment. The dense area around the business quarter has been successively occupied by Scandinavian, German, Irish, Polish and Italian immigrants, and latterly by negroes. Each group, when occupying this slum area, contributed the bulk of the crime and improved as it became prosperous and moved elsewhere. As is usual in child guidance centres, there are six services, namely, medical, psychiatric, psychological, vocational, recreational and social. Many centres include a pædiatric service. The psychological approach to the children, by studying their attitude to their toys and other recreations, is cleverly utilized.

There are two types investigated in the nursery schools:

(*a*) Professional types, as at Montreal.

(*b*) A crêche type, developed out of the necessity for the lower type of immigrant to have their children cared for while they go out to work. Mexicans and others patronize this type of school.

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The general sociological problems are studied and there is a large and excellent social workers' training centre. Other social problems, such as the negro, are also considered.

Chicago Psychopathic Hospital.

This hospital, really the clearing-house for Cook County with a population of 3,000,000 to 4,000,000, of which Chicago forms the major part, is a section of Illinois State Hospital.

Cost of maintenance.—This, owing to the high cost of staff, is assessed at $6.25 a day. The Superintendent, Dr. Francis Gerty, thinks the actual cost is $3.25, which is about £4 12*s.* a week.

Accommodation.—The beds total about 175, the daily number of patients resident being about 101. The number of patients received annually varies between 5,300 and 5,600, *i. e.*, more than 100 a week. It is therefore necessary on Court Days to empty the hospital as far as possible to receive new cases.

Source and type of admissions.—Most patients received are those referred by the Court for observation. They are kept for ten days, or up to three weeks by remands. At times cases are received on the recommendation of physicians, ar as relapsed cases from their friends.

Although voluntary patients can be received in State hospitals, the position is uncertain, as there is a risk in receiving such cases except through the Court. The medical superintendent, in view of the possibility of troublesome lawsuits, has transferred his own possesions to his wife's name. Drug addicts here, as elsewhere, are a nuisance; about 100 weekly can be admitted; some go to the State mental hospital as voluntary cases, but soon give notice.

Cases involving serious crime are not dealt with at the Psychopathic Hospital, but by the Criminal Section of the service.

Cases recommended for commitment go before a magistrate and two physicians, who replace the former jury of six with one physician. One of the physicians is a recognized psychiatrist, but both might be political appointments. The procedure is usually a formality except in contested cases, and these are rare.

Medical staff.—There are eight unpaid psychiatrists who visit in return for the right of teaching in the University. The paid staff consists of the medical superintendent and two assistants, and five unqualified house physicians. Even with this unpaid help there is a heavy burden on the paid staff.

Nursing staff.—This consists of two supervisors (matrons), 13 sisters, 75 attendants (46 men and 29 women), 20 student-nurses,

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and an occupational therapist with two attendant assistants. As usual in these reception units, it is necessary for the staff to equal or even outnumber the patients.

Despite the rush of cases, there is a considerable amount of research and treatment. Malaria and tryparsamide were early used in the treatment of general paralysis, and hyperpyrexia, induced by diathermy, is now being tried.

Mechanical restraint is permitted, but is used with discretion. A defect in an otherwise excellent hospital is the absence of an out-patient department.

Elgin County Mental Hospital.

This hospital is situated thirty-five miles from Chicago. It was built for 2,700 patients, but contains 3,300. This overcrowding is to a great extent avoided in the wards for the newer patients and in the sick dormitories. Additional buildings to contain 100 patients each are being erected. The lay-out of the wards is generally quite satisfactory, and apart from the overcrowding, the conditions are much like those of English mental hospitals. Some of the infirmary wards are circular in construction and this appears to function well.

The medical staff consists of a medical superintendent and six assistants.

The cost of maintenance is $270 a year, or about 26*s.* weekly. Much of the clothing is supplied by relatives.

Although voluntary cases can be admitted, practically all patients are certified. It is evident that when there is such pressure for beds for certified cases few voluntary cases can be accommodated.

Occupational therapy.—There are two pavilions and two teachers. All the usual articles, rugs, etc., are made. In the workshops the Lloyd loom type of paper and wire easy chairs are made and completed by spray painting.

Laundry.—The laundry plant is excellent, with six roller calenders and forced air dryers. The electric irons have indicators showing when they have been left unswitched, which is said to save much consumption of power.

Beauty parlours.—There is an excellent beauty parlour—a feature which is being added to most American mental hospitals. It is really a female hairdressing shop, and is said to encourage self-respect and interest in the person, so often lacking in mental cases. The cost of equipping was said to be about £120.

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Electrical and other equipment.—Beds capable of being moved by levers for heart and other cases were in use.

There is good electrical equipment: sinusoidal machines, ultra-violet lamps, light lamps and infra-red lamps were in use. There are good diathermy and X-ray plants, graphic blood-pressure recording apparatus, etc. The equipment is of a higher standard than in most English mental hospitals. Diathermy was used for quietening excited patients, and was said to be effective.

Massachusetts.

I visited: (1) The Boston Psychopathic Hospital.

(2) The State mental hospitals:

(*a*) The partially constructed new Metropolitan Hospital.

(*b*) Worcester, the largest in the State.

(*c*) Foxborough, a modern hospital of smaller size.

(3) Wrentham, the largest and most modern State mental defective institution.

Mental Hospital Service.

The mental hospital service, under the direction of the Commissioner, Dr. Kline, is highly organized.

There are 22,850 patients, of which 17,700 are mental cases, contained in 13 hospitals, and 5,510 are mental defectives in four State schools.

The certified accommodation is for 20,241, but the overcrowding is not obvious on casual inspection. Two of the institutions contain between 2,200 and 2,300 patients, seven contain between 1,000 and 2,000 and three, including the criminal institution, house less than 1,000. The two largest mental defective institutions contain nearly 1,700 and 1,400 respectively.

The work of the department is divided into various sections.

There is the Social Service, which consists of a director and 50 workers, who are attached to institutions and also work in the Mental Hygiene Division and Examination of Prisoners Section.

The Division of Mental Hygiene, which was established by Legislative Act in 1922, is under the direction of Prof. D. A. Thom. Habit clinics have been established. Helpful mental hygiene pamphlets are prepared for social workers and parents.

Out-patient departments, run in connection with each State

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hospital and staffed by these hospitals, are recognized not only for their value to the community, but in bringing institution staffs in close contact with early mental problems.

The cost varies from nearly $5.2 a week at the Boston Psychopathic Hospital to $6.5; the average is $7.26. Most hospitals cost about $7 a week, or nearly 35*s.*—a fairly normal rate in America. The mental deficiency maintenance averages $7.13.

Staff.—One physician is allowed to 150 patients, and another for out-patient work, school and court work. There is one nurse or attendant allowed for every 8 patients. Employees average about 1 : 5 of patients.

Training of nurses.—Only those who have had a partial or complete high-school training can be nurses, and these take their second year at Boston General Hospital or other affiliated centres. There they learn surgery, obstetrics and children's diseases. Owing to the less favourable conditions as compared with general hospitals, difficulty has been found in obtaining candidates in sufficient numbers. Those not eligible to train as nurses receive thirty hours' training as attendants, but get no examination or certificate.

Pay of nurses.—This is high, and accounts for much of the high costs of maintenance, both here and elsewhere in America. Matrons receive up to $4,000 (£800) a year and their keep, and assistant matrons $2,000. Sisters are paid $1,200 to $1,260, all with keep. Qualified nurses receive $960 to $1,080 and probationers $520, including board and lodging.

Modes of admission.—(1) Voluntary applications constitute a very small and not increasing percentage, partly owing to a legal decision limiting the type of case available. Three days' notice to leave has to be given. Epileptics can apply.

(2) Ten days' temporary observation on the recommendation of a medical man, councillor, or the police.

(3) Thirty-five days' observation or temporary commitment on a statement by two physicians or by a Court order.

(4) Commitment or certification signed by a judge.

(5) Fifteen days' observation at the request of the police or a physician or the relatives is available for drug addicts. Observation can be continued on a voluntary application or by a judge's order.

Discharges.—On discharge patients may be given trial by the medical superintendent up to twelve months. Discharges are usually determined at staff conferences.

Hospital Boards.—A board of trustees is appointed to each institution, and meets once a month. Their function appears to

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be chiefly advisory. The department and local executive officers seem to exercise control over most matters.

Mental deficiency.—All children who are three years or more retarded are examined. There is a special class if ten can be found in the school. It is believed that there are 60,000 mental defectives in Massachusetts not under institutional care. It is, however, found, as in England, that institutional care is only necessary in a small proportion of these cases.

Brigg's law.—All prisoners previously convicted of felony must be examined, on arrest, by two neutral psychiatrists; this also applies to all persons charged with serious offences, such as capital crimes, rape, etc. It is felt that this is a safeguard to the prisoner and supplies the courts with an authoritative opinion. It does not deprive the defence of the right to call other expert witnesses if desired.

The institutions, apart from the Psychopathic Hospital, are classified for receiving either mental cases or epileptics or mental defectives. The mental institutions are not classified except as regards areas, as it is felt desirable to have new cases at all institutions, although the older institutions take perhaps more chronic cases.

Habit Clinics.—These resemble *child guidance* clinics, and have been organized under the direction of Prof. D. A. Thom. He originally started the clinics in connection with a baby hygiene class, and later founded nursery and kindergarten schools. He now co-operates with school medical agencies, and consults at fashionable schools corresponding to English public schools. He does parent guidance work, and recommends suitable homes and psychologically-trained governesses. In brief, he " deals with the everyday problem of the everyday child," and " the problem child and the problem phases of the normal child."

In these clinics there are engaged psychiatrists, psychologists and social workers. Speech workers are also found useful with children who all are deaf and dumb or have other abnormalities of speech.

The child activities in Boston are rather in respect of treatment than research, although statistics are now being collected.

The famous *Judge Baker Foundation for Juvenile Delinquency* is carried on by Dr. Wm. Healey, by birth an Englishman. He reports to the court on juvenile delinquency. The routine examination includes the history, medical, psychiatric and social workers' investigation. The psychological investigation includes the intelligence quotient (I.Q.) and conduct. After investigation vocational

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advice is given. Of the cases examined, about 10% are mental defectives, and 4% are psychotic. The age-limit is 16 to 18, but cases can be held up to 21 years of age.

The parents' assent is necessary to get cases into mental defective institutions, unless the Judge will commit. Industrial schools are avoided as far as possible, as they tend to stereotype children in crime.

Dr. Healey says English problems are far easier, as detention is better, and the courts function more rapidly, and further, there is less juvenile crime purely for adventure's sake. In England the type of both police and prison official is better.

Despite the money granted in America for such work, no effort appears to be made to stop such activities as the flagrant mail-order trade in revolvers.

The Boston Psychopathic Hospital.

This is a clearing-house for occurring mental disorders in the city of Boston. It now contains 126 beds and an important out-patient department. It has a staff of about twenty medical men under Prof. McFie Campbell, the Director, who is a notable writer and teacher.

There is another out-patient department for mental cases, that connected with Boston General Hospital, and it is notable that these departments are stated to be about equally busy.

An interesting experiment is the appointment of a chief executive officer and an assistant executive officer. This is designed to relieve Prof. McFie Campbell of much administrative work, which would otherwise detach him from teaching and research. Further, it gives mental hospital officers an insight into the working of a psychopathic hospital or clinic. Owing to an interchange being possible, one officer at least, before becoming the medical superintendent of a State hospital, has held this executive position and later the post of assistant commissioner.

Prof. McFie Campbell's chief assistant is Dr. Bowman, the chief officer of the female side. He also teaches and consults—an arrangement which gives him a distinct status. The medical officer on the male side is a full-time officer.

Out-patient Department.—This consists of a dozen rooms. Prof. McFie Campbell and his deputy each take a day, and the former teaches on two days a week. Four consultants, all of whom have been on the house staff of the hospital, take days, and the other members of the staff attend.

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About 125 patients are seen weekly, some 25 of these being new cases. The cases are mainly referred by doctors, but numerous children attend for behaviour problems. Discharged patients also attend. Future in-patients, and exceptionally cases from other States are seen. Formerly old in-patients were given hydrotherapy, but this had to be stopped as it became too popular.

Social Service Department.—The social service comprises a chief and four assistants, and two student workers.

In-patient Department.—Admissions total 2,200 to 2,400 a year, or about 200 monthly. The cases are received on a ten or thirty-five days' order, and may later be permanently committed and then transferred.

The Director and Deputy-Director hold daily bedside clinics for students and others.

The building has four floors, and includes occupational and recreation rooms. There are no day rooms, but there is a dining-room off each ward. There is a general kitchen. There are dormitory side rooms and night dormitories.

The hospital is well equipped for hydrotherapy. The baths have covered tops, the use of which would constitute restraint in England. There is no other mechanical restraint. Wet packs are used, but are not considered restraint. There are no padded rooms. There is a good X-ray and electrical plant.

Dr. Soloman is in charge of the Neuro-syphilis Department, where malaria, tryparsamide, and other forms of treatment are practised. Rat-bite fever has been tried.

It is notable how a reception unit forms the principal teaching and research unit of this great city, despite the fact that the staff are so busily occupied in clinical work.

The Metropolitan Mental Hospital.

The Metropolitan Hospital, now under construction for the Massachusetts Mental Service, is of interest as showing the results of the experience in hospital construction of this progressive state. It seems likely to combine efficiency with economy. It consists of an acute and a chronic section, with the usual administrative buildings. The acute section, unfortunately, had not been constructed when I visited.

The hospital is designed for 2,000 patients. The chronic or "continued treatment" section is designed to accommodate 1,248.

The main building consists of six three-storied blocks. Eighteen

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wards contain 52 patients each. There is a kitchen and dining-room attached.

The dormitories are partitioned into three sections containing 22, 12 and 10 patients, and there are six side-rooms and two double-bedded rooms. Some of the side-rooms have double doors to prevent isolated cases from disturbing their neighbours. The side-rooms are heated and triplex glass is used for the windows and observation panel. There are no shutters; a crank set in the wall below controls the windows.

The windows throughout are of the folding casement type, each section having small panes. It is a pleasing type of window and provides adequate ventilation. Such a window is in use in the new villa at Claybury.

Hot-and-cold water laid on to all wash-basins is said to be safe owing to the efficiency of the mixing valves. There is no central bathroom, but a continuous bath and four showers are provided in each ward. The bath is adaptable for cleaning purposes. The closets are low, with low divisions, which allows observation while giving privacy.

A caged-in "porch" or verandah on each floor provides fresh air under protected conditions in inclement weather.

Each ward is provided with two visiting rooms, ensuring a degree of privacy.

The administrative block is of concrete, with cane fibre (cellatex) for sound insulation. Provision is made for a well-found medical library and there is a records room.

Dictaphones will be used here as elsewhere in connection with the clinical records.

Nurses' home.—A nurses' home of 150 beds is a three-storey building. There is a day room on each floor. Features seen were a trunk lift, a cocoa room, an ironing room, and excellent porches or verandahs. The sanitary arrangements were rather more elaborate than in England.

Supervisors or matrons and similar officers have suites with a sitting-room and a bedroom fitted, like those in all good American hotels, with a bath, basin and closet. Allowing for the slight difference in sanitary standards, accommodation is similar to that in England.

A feature is that the clerk and treasurer is to be a woman, as in many American mental hospitals. Such officers are usually paid about £1,600 with full keep, and rank with the matron.

The steward is a man and is more highly remunerated.

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Worcester State Mental Hospital.

This is the oldest and largest of the Massachusetts State mental hospitals. Much progress has, however, been made in modernization. The conditions regarding staffing, terms of admission, cost, etc., are to a great extent standardized throughout the whole Massachusetts service, as in London, and much of this general information was gathered here from Dr. Bryan, the Superintendent, who gave me every help.

About a dozen consultants are attached to the hospital and their services fully utilized.

There is an adequate operating theatre and good X-ray and other electrical plant.

There is an infirmary or hospital block containing 250 beds. Trained nurses are in charge of this, assisted by attendants, both male and female, and there are the usual hydrotherapy facilities.

Suitable female patients are granted modified "parole."

Malaria and tryparsamide are used in the treatment of general paralysis. Biochemical work in regard to dementia præcox is being done.

There is a wire screen to enable observation to be made on patients, who believe themselves alone. A similar screen is used in various child clinics.

The workshops are satisfactory and similar to those in England.

The laundry is efficient, but not notable. A staff of 13, with 50 patients, is able to wash 45,000 lb. a week, or between 60,000 to 70,000 articles.

The needle-room has 6 paid seamstresses and 20 patients—a higher proportion of paid hands than is usual in England. More use is made of mechanical aids. A Singer's darning machine and a button machine appear to be useful. An electric cutter-out, costing $40 to $50, seems most useful, as it enables one person to cut 20 dresses at a time.

No canning is done, but tomatoes, peas, beans, etc., are preserved in brine and by cold storage.

Cafeteria and food arrangements.—Worcester is the principal place where this has been developed, and 1,200 patients out of 2,100 feed in one large hall. Some 450 others feed in another hall, and the rest by tray service.

The building of this large hall together with its equipment cost $13,000.

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It is rightly claimed that this system allows good feeding with very little waste. At Worcester 1,200 patients receive three meals a day, or 25,200 meals a week. The change of atmosphere is given as one of the advantages of the system.

Patients march into the hall, which is reasonably central. Each receives a tray containing a knife, fork and spoon wrapped up in a napkin. This, in all respects, corresponds to the conditions for customers in the cheaper type of " self-service " restaurant. They take bread and glasses of water, and then indicate which of three choices of meat they desire. They select vegetables, and then have two choices of sweets.

They pass down the cafeteria counter just as they are accustomed to do in restaurants outside, except that there is no cashier at the end of the counter to assess and charge.

Having selected their diet the patients sit where they like. Small helpings can be given, and 56% of the men and 27% of the women have a second helping. It is claimed that waste is negligible —about 2 oz. per patient, including potato skins. The choice and second helpings with a smaller initial helping undoubtedly eliminate nearly all the waste.

Patients such as recent melancholics, who may need to be persuaded to take food, are not suitable for the system. It is mainly for the healthy chronic, although convalescent patients would be able to use it.

To take full advantage of the cafeteria, a good signalling system is necessary between the service counter and the kitchen, to prevent cooking of less popular items.

I am informed there is no difficulty in patients feeding suitably or obtaining suffiicent nourishment, and certainly the absence of waste is most impressive. This is due to the smaller first helping, with a second helping if desired, and to the system of choice. Giving a smaller initial helping is possible without the cafeteria system, but is open to the danger that some patients might eat less food. Choice by means of a menu is also possible apart from cafeteria feeding. A menu the day before is not likely to be so successful as the choice of a meal just before consumption.

The practical difficulty in introducing the system into England is that no one is accustomed to the method, and patients would be less adaptable than in America and Canada. To utilize the system properly it is necessary to construct a dining-room in conjunction with a modernized kitchen—a costly initial procedure.

In a large mental hospital it would take far longer to collect the

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suitable patients centrally than to distribute the food, and occupy much more of the staff's time.

The general feeling in Massachusetts seems to be that the cafeterial arrangements at Worcester are an advance.

I do not think the system would justify the cost of initiating it in England.

The principles of lesser first helpings and of choice by menu are well worth trying. Any waste under the present system occurs from certain items that are unpopular, and are not fully consumed. Such may theoretically be the best; they include cocoa and porridge.

Tasty made-up dishes tend to be popular instead of plain joints. The system diminishes the institution tendency to prepare food in the quickest and easiest way without regard to its palatability, especially if the staff are given a choice of food. On the day we visited Worcester the staff had four choices of meat and two of sweets, with coffee or tea and bread and butter, and a good hot rack for plates.

Foxborough State Mental Hospital.

This hospital, which opened for mental patients in 1905, had previously (since 1890) accommodated alcoholic addicts. It is 30% overcrowded, this being most evident in the chronic sections. The general features are as in other modern hospitals in the State. There is a good medical library, with a $300 yearly grant for scientific periodicals. The male infirmary section is in charge of a certificated female nurse. The electrical and hydrotherapeutic equipment is good. High steel lockers provide suitable wardrobes for the patients. Occupations were well found.

Patients have meals in a large hall. A number of food trolleys are situated at the end of each set of tables. It is stated to be the best system short of a cafeteria. It presents few advantages over the London County Mental Hospital method and has some disadvantages. The food trolleys are insulated on the hay-box principle instead of being heated with hot water.

Up to 23,000 gallons of beans, corn and tomatoes are preserved every year. Other minor points include electrical hair-driers; the taking of patients' photographs by arc light, and a good bowling-alley and recreation hall. Home-made terazzo floors are stated to be successful and cheap. A special polishing machine is required. Unless laid in small sections terazzo is said to crack.

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Mental Deficiency Institutions.

There are three mental defective schools in the State. Waverley, the oldest and largest, is now renamed after its late Superintendent, the distinguished Dr. Fernald.

Wrentham Institution was opened in 1910 to accommodate 1,400 defectives, and Belliston in 1923. In addition there is Bridgewater for delinquent and uncontrollable defective. There is overcrowding on the original liberal scheme of 700 patients.

Wrentham Mental Deficiency Institution.

Wrentham is administered by Dr. Wallace, who has written an instructive pamphlet on the arrangement and construction of a mental defective school. The Institution is planned on a colony basis around a quadrilateral space, which contains a power station, laundry, schools, hall and industrial and occupational centres. Each villa is planned for 105, but contains 125 patients. The villas have two stories and a basement. There are three dormitories and one dining-room. The day-room is placed between the dormitories so as to give air access to the latter on three sides.

A similar result is obtained at Letchworth (New York State) by a slightly different arrangement.

Shower baths are provided. There is a sick bay and a quiet room in each villa. A lavatory in each ward is found to save time and trouble.

There is a small X-ray plant.

The classes are taken round to the various teachers.

Medical staff.—The medical staff consists of a medical superintendent, a deputy medical superintendent and two men and three women assistants—total seven. One is utilized in school work. Fourth year students also attend and assist. There is a resident dentist. Consultants are called in as required, and are especially used for nose, throat and orthopædic work. Full notes are taken on admission, and the child's relation to normal level noted.

Nursing staff.—A matron and seven assistants, including night staff, are in charge of each villa. The matron is a promoted assistant and untrained. A certificated nurse is in charge of the infirmary or hospital ward.

Occupations and teaching.—The workshops are a leading feature. There is good needlework, weaving of towelling and scarves, and basket, rug, mattress and stocking making.

In addition to the special classes referred to below, co-ordination

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is taught by means of woven and hook rugs. For material, rags and blankets are unwoven. Good rag dolls and dolls' houses are made. There is a toy shop and a regular issue of toys to the wards. There is a furniture repair shop, and a carpenter's shop for different grades of skill. The sample shop teaches the use of money and also conventional manners in buying. The beauty parlour is principally used to teach hairdressing to both boys and girls—a useful and, I am informed, successful development. The demonstration kitchen teaches the children how a small house is run and how to lay the table, etc.

The classes last fifty minutes with ten minutes' play. They vary from kindergarten level upwards.

Special sense training.—There is a sense-teaching room, where in the low-grade cases the use of the special senses is developed. There is also a speech-defect class, taught by "graduates" in oratory and elocution. Co-ordination, so often impaired in these cases, is carefully taught. Hammering in a nail is taught by at first teaching the child to hit the end of a tree-trunk. Other work consists in teaching how to make a circle of stones in clearing land. Walking upstairs and up ladders is carefully taught. Low-grade defective imbeciles are trained to be personally clean and to do such elementary work as clearing land.

Cleanliness is taught in a habit room by methods similar to those applied in cases of dementia præcox at some mental hospitals. "Table-clothes" are buttoned on to the children. There are lockers for the children's treasures. The clothes are well arranged on hangers—a useful hint to mental hospitals.

Printers' shop.—A printing press, worked by the defectives, enables dainty programmes of the various activities to be produced. Most of the official forms are also printed locally.

Washington, D.C.

St. Elizabeth's Hospital.

There are 4,331 patients in the large hospital of St. Elizabeth, which since 1903 has been under the well-known psychiatrist Dr. William A. White. The hospital accommodates cases from the district of Columbia and also all Federal State cases, generally ex-government employees. It was founded in 1855.

The buildings are thus mainly old, but a new medical and surgical addition is being erected, the first new building since 1913.

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There is a fine hall, accommodating 1,200, but insufficient for the number requiring to use it. There is a good Red Cross hut, which is used as a club house and canteen by the parole patients, and is much appreciated.

The cost of maintenance, formerly $1.45 a day, is now $1.85 a day, or say £2 14*s.* weekly, which is probably higher than in English county hospitals, even allowing for the difference in the cost of living. Over 60% represents employees' pay—always one of the principal reasons for high costs in America.

A notable feature is the excellent medical library of 11,200 volumes, in charge of an experienced librarian, and a centre to which all interested in psychological medicine can confidently appeal.

There is also a good patients' library of 14,000 volumes.

The pathological institute is well known for its output of important work.

Malaria and arsenical treatments are given for general paralysis. The opinion is forming that malaria does just as well without tryparsamide, etc. Inoculation is directly from patient to patient and not by mosquitoes.

Medical staff.—There are 48 house doctors, who are graded after the two first assistant physicians or deputy medical superintendents as five principal medical officers, eleven senior medical officers, a medical officer, seven associate medical officers, eight assistant medical officers and fourteen junior medical officers.

The principal medical officers include the director of laboratories, the director of internal medicine and Röntgenologist, two clinical directors and a clinical psychiatrist. There are also a bacteriologist, a psychologist, three dentists, a veterinary officer, and an imposing staff of consultants, including two physicians and six surgeons and sixteen other specialists.

Nursing staff.—As usual in America, those qualified by having had a secondary education go for six months to a general hospital to complete their training for the general certificate examination.

" Psychiatric aids " who have some high school education have two years' training and an examination, while attendants get 40 lectures. Nurses and attendants are said to be easy to obtain. Married nurses are allowed to resign and rejoin after a confinement. Nurses from affiliated general hospitals attend for three months.

Occupational therapy.—There are 16 occupations' officers—1 man and 15 women. Occupational therapy is applied to 833 patients, but difficulty is found in disposing of the products.

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Discharge.—Patients are discharged cured, improved or not improved. The second class have to obtain a certificate from the superintendent as to their fitness, or suffer legal disabilities on discharge. This appears desirable, but the disability in any case only counts in this State District of Columbia.

The usual beauty parlour, electrical and hydrotherapeutic equipment are found.

The Lunacy Law of 1928 is rather archaic, and Dr. White is appealing for changes, including powers to admit voluntary patients.

District patients come in through the local State hospitals, while official patients, *i.e.*, Federal State employees, come through their department.

There is a criminal section, which Dr. White is hoping to have removed.

MARYLAND.

Phipps Clinic, Johns Hopkins' Hospital, Baltimore.

This is the clinic attached to the great Johns Hopkins' Hospital. It is small and contains only 60 beds, but has attained an international reputation under Dr. Adolph Meyer, the Director. Unlike other clinics at Boston, Toronto, Chicago, etc., it is unconnected with the city or State administration, and merely receives voluntary cases, who apply either through the out-patient department or otherwise. Owing to its great reputation it has a long waiting list.

It is heavily staffed. There are 8 house physicians and a resident psychiatrist, with 2 unattached medical officers. The deputy director and his assistant attend mainly to the out-patient department.

There are five fellowships and various voluntary clinical assistantships. About twenty people attend the staff conferences.

It has good research and teaching laboratories, and much experimental investigation is carried out.

About 475 cases are treated in a year, with 394 admissions, representing an average stay of rather less than two months.

The results, which obviously represent careful conservative figures, show that 20% are cured, 7% are improved greatly, 36% are improved, 29% are unimproved (mainly committed) and 8% not treated.

The nursing staff consists of about 60 nurses and attendants, including 16 men.

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The maintenance ratio is $49, or about £10 weekly. About a quarter of this is borne by the Phipps Foundation and the rest is provided by patients' fees.

It is an excellent clinic, run in conjunction with a general hospital, and unaffected by the necessity of dealing with any but selected cases. Although on this basis and somewhat chary of co-operation with the city and State activities, it most resembles the Maudsley Hospital, which also has complete liberty in selecting patients, although administered by a county authority.

It is notable that Maryland has two similar institutions one run by a general hospital and the other by a municipality.

There is also a child guidance clinic in Baltimore, and an out-patient clinic conducted by Father Moore.

Pennsylvania.

I was informed that Pennsylvania State has a population of about nine to ten millions, and about thirty thousand mental patients, including epileptics, but excluding mental defectives. Proportionately these figures are a little higher than the corresponding London figures.

The city of Philadelphia reception units for mental cases were not seen.

Department of Nervous and Mental Disease: Pennsylvania General Hospital, Philadelphia.

This is in a state of transition somewhat similar to that of Bethlem Royal Hospital. It is a section of the General Hospital, but is separate and has its own endowments.

It was fortunate in being granted a block of Philadelphia when the city was undeveloped. Its present property is of great value, and a portion is being sold to meet the great changes contemplated.

It was moved in 1841 and 1859, and is now moving and rebuilding again. It contains 300 patients at present, in two sections—male and female.

With considerable vision it is proposed to rebuild one of the sections in the city as a well equipped hospital with a clinic for voluntary patients and an out-patient department. No refinement is being left out to make this successful, and it includes private consultation rooms for the staff. Another building is being constructed in ample grounds clear of the city, and is intended for committed and protracted cases.

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To the 300 beds about 300 patients are admitted per year, with about 50 on trial. The duration of cases varies from two days to three years, with an average duration of five months. Discharges are classified as follows: recovered 20%, capable of self-maintenance 20%, improved 30%, not improved 30%.

Post-encephalitic children are now being received and studied.

Medical staff.—The medical staff consists of the director, an assistant director and a psychologist, assisted by six social workers.

Nursing staff.—The nurses are trained in conjunction with the affiliated general hospitals, to which they go for fifteen months. Affiliated nurses from the general hospitals are also received here for training for three months.

Out-patient department.—A large and active *out-patient department* is run under the direction of Dr. Strecker. Both he and Dr. Earl Bond, the Director, hold teaching appointments. Dr. Copp (the late Director) is in charge of the important new developments.

Of 976 cases seen in the out-patient clinic, 332 were men, 354 women and 290 children. Psycho-neuroses totalled 243, neurological cases 203, psychoses 120, and behaviour problem cases 135.

Child guidance.—There is a child guidance centre here under the direction of Dr. Allen. It was started in 1925 on a grant from the Commonwealth Fund. It now derives funds from its share in the " City Chest " or joint Charitable Fund.

About 300 new cases are seen a year among 500 or 600 attending. More pre-school children now attend, and a higher proportion are brought by parents and less from social agencies. It will be noticed that quite a number of such children attend the clinic at the Pennsylvania Nervous and Mental Hospital.

Connecticut.

Gessell's Clinic at Yale University, New Haven.

This well-known clinic was started as a research unit for maladjusted children. Later, children of the pre-school years were taken and parent guidance dealt with. The clinic is in connection with the University, and there are no fees for the children. The children differ widely in class, but are mainly of normal intelligence. There are elaborate provisions for studying babies and young children behind observation screens.

" The Institute of Human Relations " is being developed here. This is an ambitious scheme to study all human family relations.

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It will absorb the Gessell's Children's Clinic. Dr. Healey, of the Judge Baker Foundation, will also work here. Abnormal psychology will be studied at an adjacent mental hospital. This Institute is being organized by Dr. Winternitz, Dean of Yale University. Dr. May, the Professor of Psychology at Yale, is actively interested and has done much preliminary work.

New York.

State Department for Mental Hygiene.

The Department for Mental Hygiene controls sixteen State mental hospitals, four State schools for mental defectives, and an epileptic colony containing 1,584 patients.

The State hospitals are certified for 34,783 patients, but contain 45,319 patients, excluding 4,837 parole patients. Overcrowding exists on an average to the extent of 30·3%.

The State schools are certified for 4,952 patients and contain 7,528, with 1,001 on parole, and are overcrowded to the extent of 22·8%. The grand total of patients controlled by the Department is 63,438.

The various institutions date from 1843 to 1924.

The medical staff totals 294, of whom 45 are women. The proportion of medical men to patients in New York State is 1 : 175, which is almost exactly that obtaining at Manhattan.

In the mental defective institutions the proportion of medical staff is 1 : 301 patients.

Ordinary staff—ward—4,939, consists of 2,434 men and 2,505 women—a proportion to patients of about 1 : 9'2. Other employees 3,846, give a grand total of 8,785, being a proportion of 1 : 5 of employees to patients.

The average total cost of patients in the mental hospitals is $404 or $7·7 a week each, or about 38*s.* weekly—rather higher than elsewhere, but the cost of living is higher in this area. $188.77 is accounted for by personal services, *i.e.*, staff salaries—a high item here as elsewhere in America. Food is responsible for 93 dollars—a proportion corresponding closely to English standards.

There is a standard rate of salaries with regulations for all grades of employees, from superintendent to messengers. First assistant physicians and clinical directors rise to the minimum of a medical superintendent. In addition to their salaries the senior medical staff receive full keep for themselves and their families. This is on a ration basis, and is said not to lead to waste.

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The Department is under a medical commissioner, with an assistant commissioner for mental deficiency and epilepsy. It is divided into three divisions:

(*a*) Mental disease.

(*b*) Mental defect and epilepsy.

(*c*) Prevention.

The latter division is in charge of a psychiatrist with two assistant psychiatrists, and has a secretary and five field agents, apparently attached to various law courts.

There are committees in relation to the various activities, such as legislation, statistics, personal nursing, examinations, preventive work, etc., drawn from the personnel of the service and others.

A board of visitors of seven, including two women, is appointed to each hospital. They have considerable powers of inspection and investigation. Indeed, a report similar to that required in London is given by the superintendent, but appointments and dismissals are made by the local executive.

The visitors are appointed by the State Governor.

Modes of admission.—Cases can be received voluntarily into either the mental hospitals or defective institutions or the epileptic colony, or they may be committed.

They can be received for thirty days' observation on the order of a health officer, or on a petition and medical certificate for ten days. They can be held similarly on the medical certificates accompanying the order, pending signature of the latter by the Judge.

Certified or committed cases require two separate medical certificates and the order of a judge.

Discharge.—The medical superintendent may, on certifying to the State Department, discharge cases as "recovered." Those not recovered, but whose discharge is not detrimental to the public welfare, or who are "dotards," can similarly be discharged.

If the superintendent opposes the discharge of an unrecovered patient, appeal may be made to a judge.

Trial or "parole" may be granted, as in Massachusetts, up to a year, and in practice patients are made to report as often as necessary, generally at one of the clinics run in the city. "Parole" was formerly limited to six months, but this was found insufficient.

No allowances are granted on parole, but up to $25 may be given on such discharges. The social agencies try to find work for ex-patients, and usually succeed.

The numbers on parole from Manhattan State Hospital have

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been as high as 1,700. Recently they have numbered about 1,300. Of 785 during the year 1928, over 70% were discharged and rather less than 30% relapsed.

The clinics for patients reporting are mainly attached to the out-patient departments at various general hospitals. At first much difficulty was experienced and some hospitals demanded payment, but now cases are referred there. Two Manhattan medical officers spend their whole time on the work.

Nursing staff.—Two years at a high school is required to enter as a nurse, and shortly a complete high school or secondary school education will be necessary. This will raise the question of training the so-called attendants—an idea which is likely to materialize in Massachusetts.

Social services.—The social services—

(1) Look after necessitous relatives of people in the hospital.
(2) Prepare patients for trial.
(3) At times assist with the histories.
(4) Provide foster homes where necessary.

The Child Welfare Society helps in the case of American citizens, and various national societies in the case of aliens.

Promotion of medical officers.—There is a scheme for regulating promotion of medical officers in the New York State Hospital Service. It endeavours to take into account, in due proportion, various factors for which 100 points may be given:

The written examination counts	30
Service record rating	30
Experience and training	20
Written article on topic selected by candidate in neuro-psychiatry (or published papers)	10
Seniority (not over five years)	10

The endeavour is to be absolutely impartial by eliminating any possibility of influence.

Visits were made to the huge Manhattan State Hospital, Wards Island; Bloomingdale Hospital, reputed to be one of the best equipped private foundation hospitals in the States; the new Psychiatric Clinic from Manhattan, now established near the Presbyterian Hospital and Columbia University; the observation wards at the Bellevue Hospital, through which most of the New York City patients pass; Letchworth State School, a new and typical mental defective institution.

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Manhattan State Hospital.

This hospital was opened in 1905 and contains 6,783 patients, although scheduled for 4,885—an overcrowding to the extent of 39%. This is fully appreciated and deplored, and is emphasized in reporting to the Board. A new medical and surgical building is expected. As is evident in the admission block, no overcrowding is allowed.

A diagnostic clinic is attached to the female admission block. In this all specialities are represented, and rooms are fitted for dealing with patients as in the out-patient department of a general hospital. In addition to this admirable arrangement, there are X-ray, electrical and hydrotherapeutic installments.

The female admission villa contains five wards for thirty-four patients each. There is a medical officer-in-charge and six physicians. One of these wards is for disturbed cases and restraint is applied when necessary. There is a reception hall.

Malaria and tryparsamide are used for cases of general paralysis with satisfactory results.

Medical staff.—The medical staff consists of 36 physicians, of whom 6 are women. There are three first physicians, or deputy medical superintendents, one each in charge of the male and female divisions, and one as an extra acting medical superintendent. In ordinary hospitals only one first assistant physician is allowed, although other large institutions such as King's Park, containing over 6,000 patients, are allowed three physicians of this grade; similarly, Hudson River, with 4,400 patients, is allowed two first assistant physicians. At Manhattan there is also a director of clinical psychiatry, a pathologist, 6 senior assistant physicians and 27 assistant physicians and medical internes—a proportion of medical staff to patients of 1 : 174. The nursing staff averages 1 : 10 of patients. The director of clinical psychiatry lectures on the anatomy and pathology of the nervous system to all newly-joined medical staff, but no psychological diploma course is attempted.

Case-taking system.—There is a mental and physical examination on admission, with supplementary sheets for specialists' reports. The sheets are sent to the clinical director, who makes a provisional diagnosis and summarizes, and three months later gives a definite diagnosis.

Buildings, etc.—The hall holds 720. It is well equipped, but inadequate in size for the institution. There is a good gymnasium, and 700 patients greatly benefit by exercises.

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There is an excellent training room for cases of dementia præcox. These cases often deteriorate to the state of the low-grade imbecile as a result of their psychosis. Intensive training may change such costly dements into useful, partly self-supporting workers.

The workshops are extensive and varied. There are ten occupational therapists. Rugs, scarves and leather work are well executed. Most artistic metal work is constructed mainly out of large old cans.

The laundry is excellent, and about 450,000 articles are washed weekly. Every mechanical device is used, including forced air-dryers and six- and eight-roll calendars. The latter if enclosed can also rapidly dry woollen goods with the aid of forced air, and they are said to be most efficient. Proper springs to the calenders are said to repay costs quickly. Washers 42 in. by 72 in. and 42 in. by 84 in. are said to be the best. The size 42 in. by 96 in. is thought to be too large and wasteful.

The ornate iron windows in the chronic blocks are being replaced by modern sashes—this in all respects resembles the process of modernization going on in some English hospitals.

The organization of this great hospital is remarkable, and one feels that only a notable personality, such as was possessed by the late Superintendent, Dr. Floyd Haviland, could adequately control such an aggregation.

Bloomingdale Hospital.

This is a mental hospital run by the Society of the New York Hospital. It accommodates 298 patients and has 13 medical officers. It is very well equipped, and the cost per bed is stated to be about $60 a week. The maintenance charge, however, works out at rather less than £10 weekly.

Of 529 cases treated in a year, about half the expenses were borne by the Foundation and 28 cases were treated gratis.

It is meant for the educated classes, and statistics of the types admitted show that this idea is carried into effect. 70% of the admissions are voluntary—a vastly higher proportion than in the State hospitals. The same tendency for admissions to be largely voluntary, however, occurs in corresponding English hospitals.

Nursing staff.—The nurses go to affiliated general hospitals for fifteen months, and nurses are received for three months' training from five general hospitals.

General.—Inevitably some of the equipment is somewhat old-fashioned, but generally a very high standard is attained;

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notable features are the gymnasium and the occupational therapy pavilion.

There is a good demonstration kitchen for teaching the nurses invalid cooking.

There is a well-fitted room or clinic for sick employees.

Out-patient work is a feature of the New York Hospital.

Psychopathic Hospitals.

Two psychopathic hospitals are being established in New York. One is just completed, and one is still in the stage of being planned.

The Psychiatric Hospital.

The completed hospital has developed from the Psychopathic Unit, formerly on Ward's Island at the Manhattan State Hospital. It is a stately building of twenty stories overlooking the Hudson, and adjoins the Neurological Unit of the great Presbyterian Hospital. Its height is due to its being built on valuable land in the Columbia University quarter. The arrangements are on the lines of a good clinic both in regard to the beds and the out-patient department. It is constructed for 250 in-patients, and is intended to be a notable teaching and research centre.

Voluntary patients are to be admitted, but "committed" cases will be received for research and teaching. There is also a floor for children.

Psychopathic Wards at Bellevue Hospital.

The other psychopathic hospital is intended to replace the present observation wards at the Bellevue Hospital. It is planned to have 600 patients in seven stories. When completed it should be the most notable reception and observation unit existing anywhere for classifying and dealing with such patients. The building will cost $900,000.

The existing four observation wards contain 250 beds. Ten doctors are employed and 12,000 cases are dealt with in a year, half of which are recurrent alcoholics. It receives the bulk of the patients from New York city, some going through another unit. Two wards are reserved for acute cases, but all are nursed by women, and men working under the sister in charge. It was found the standard of treating the patients fell when men only were in charge. The nurses form part of the general nursing staff of

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Bellvue Hospital, and are controlled by the supervisor or matron of that hospital.

Restraint is freely used when necessary, but appears to be judiciously applied.

The development of these two kinds of clinics, each dealing with a different side of the problem, represents a notable advance.

Letchworth Village for Mental Defectives.

This institution is under the direction of Dr. C. S. Little, who kindly accompanied me during my visit.

The certified capacity is for 1,988, but 2,475 patients have been admitted and 58 are on parole.

While the usual acreage of a mental hospital is 640 or less, this colony has 2,234 acres, including a small mountain. It has been planned for 3,500 patients in six units on the villa system, of which four have been built, namely:

(1) For educable girls under 16.
(2) For educable boys under 16.
(3) For girls over 16, middle and high grade.
(4) For girls infirm and cripples (including untidy idiots, etc.).
(5) For boys corresponding to Group 3. Under construction.
(6) For boys corresponding to Group 4. Under construction.

There are 80 defectives in each dormitory and eight dormitories in each group, which totals 640, the four groups being the total of 2,560.

Many patients cannot come to table, but dining space is made for 100. It would be possible to add to this and deal with 120.

There is a central hospital for the sick with qualified nursing staff, and a farm colony for 60 boys. In addition there are school and industrial buildings, an employees' building and a central dining-room, and the usual large farm.

There is a good medical library and laboratory.

The maintenance is $336 a year, or about 25*s.* weekly.

Medical staff.—There is a clinical director who supervises records, psychometric, physical, social and other services. There is a pathologist, a psychologist and a social worker under the clinical director. Notes are taken frequently in the early stages and twice yearly up to two years and yearly after three years.

Nursing staff.—As at Wrentham, there are no trained nurses except in the infirmary, and all matrons and charge nurses are promoted staff. Constant changes are said to occur. The nurses'

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rooms are as well fitted as similar rooms in England. The teachers are from the elementary schools, while the instructors are mainly attendants.

Occupations.—All kinds of occupational therapy are practised —rugs, household work, book-binding, baskets, brushes, mats, carpentry, printing, furniture and boot repairing are all taught. A gymnasium class is also held.

Discharge.—There are 47 on parole, which is granted for periods of 1 to 5 years. A trial or "parole" patient is usually sent to the care of a family who want a domestic and receive an allowance. The child can be removed at any time and all chance of exploiting is avoided.

The New York Child Guidance Clinic.

This is a well-organized clinic, with an office containing twenty silent typewriters. About 800 cases were admitted during the first year. The object is to study maladjusted children, and not psychotic or mentally deficient or epileptic children. The child is investigated from the psychiatric, psychological and social points of view and also by a pædiatrician. This is one of the best known children's clinics in the New World.

The National Committee for Mental Hygiene.

Much of the activity and drive in controlling the occurrence of mental illness in America and Canada has come from the Mental Hygiene Movement, of which Mr. Clifford W. Beers is Founder. All allied activities have been helped and encouraged, including child guidance and general clinics; delinquency, mental deficiency and other social problems are tackled. Leading physicians are zealous supporters of the movement.

Summary of Impressions.

In seeing the various activities in other countries, certain things appeal to one as obvious advantages, some as disadvantages, and some as things merely done differently.

The almost universal disposition to establish out-patient departments in connection with the mental hospital service is entirely to the good. Such an out-patient department is usually conducted at a nearby general hospital, and only in the case of the psychopathic

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or reception hospitals is it actually within the hospital itself. This activity brings the mental hospital staff into touch with the earlier phases of mental and nervous cases, and maintains a close co-operation with general hospitals and other branches of medicine.

The tendency to build an increasing number of reception units or psychopathic hospitals shows the success of this development. Most of the older psychopathic hospitals appear too small for their purposes, and some are under-staffed. Where, as is usual, out-patient departments are attached, they appear highly successful. Theoretically this is a debatable point, the feeling being that people will keep away from such psychopathic units, but experience in Boston and elsewhere proves that this is not so.

Whereas the former observation wards were part of the city or general hospital, the tendency is to build for this purpose separate though contiguous buildings, and this, as in Germany, appears to be successful.

Psychiatric teaching of all kinds is encouraged everywhere, as tending to keep up interest and the study of the cases at a high level. Apart from medical students, classes for psychological students and social workers, etc., are organized. All this appears to be development on the right lines and is stimulated by the Mental Hygiene Movement. Encouraging signs are the Mental Hygiene Division in the Massachusetts Service and the Division of Prevention in the New York Mental Service. They indicate attempts to grapple with the problem in its broader aspects. Allied to this are the valuable Social Workers' Departments which are being organized everywhere.

The proportion of medical staff to patients is high, and this is probably of distinct benefit to the patients.

A common appointment in the United States and Canada is that of clinical director or clinical psychiatrist. His work is to direct the treatment of the patients, and also to do research and teach. In some large hospitals he gives lectures to his colleagues and also to the nursing staff. The appointment usually ranks next to that of the deputy medical superintendent, and is equal to the pathologist. The maximum pay of the position often equals the minimum of the medical superintendent. It is an attractive appointment, and is usually held by able and active men. This arrangement appears to be of the greatest help to the hospitals, and with open competition for such appointments progressive work is assured, and this type of man soon finds promotion. The employment of psychologists probably helps in the development of

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psycho-therapeutics and is also of value in recording observations.

The close association between mental and general nurses in America helps greatly. The American practice of sending the nurse for six to fifteen months to the associated general hospital and then giving her the general certificate will probably never find favour in England.

English general hospitals tend to go to the opposite extreme, frequently ignoring all mental training. Some compromise between the two should be adopted. Mental hospitals taking general-trained nurses for three months' experience has already been tried in Great Britain, with obviously good results.

The adoption of sense-training classes (originated for the low-grade defective) for the cases deteriorated by psychosis is an experiment well worth trying in this country. Such cases are generally those of dementia præcox, and although it may not increase the recoveries, it should change many degraded and troublesome cases into patients capable of some work and self-help.

The mental defective "schools" at Wrentham and Letchworth impress one as a tackling of the problem in a sensible, practical and economical manner. Few trained persons are available, and to a great extent the institutions train their own people. Sense-training, occupational therapy and teaching appear to be well designed and adequate. The organization of games, dramatic entertainments, etc., appear to be well designed and arranged with taste and sense.

Child guidance, nursery schools and parent guidance are comparatively new features. All units have varied but usually similar modes of approach, *i.e.*, a psychiatrist who acts as director, and co-ordinates the other activities: a psychologist, a children's physician or pædiatrician, a social worker, and recreational and other workers are sometimes added.

The work has frequently been started in connection with juvenile delinquency, and is generally studied in the case of the maladjusted child. The necessity of obtaining a standard from the normal child has influenced most of these units. Feeble-minded and epileptic children are definitely not desired, and those with psychotic tendencies are generally not welcomed. In regard to the last, one feels that valuable data need to be collected, but possibly a child-guidance centre is not the most suitable for this.

Child guidance used in its broadest sense to include habit clinics, parent guidance, etc., tends to link together the work of the psychiatrists, neurologists, psychologists, educationists and those controlling the defective and feeble-minded. Whether such clinics

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can exist as separate entities or whether it is possible to provide these facilities as part of a general or nervous and mental hospital department is doubtful.

Separate blocks for medical and surgical cases in mental hospitals are being widely constructed and should be useful.

On the material side several points are worth consideration.

The system of excellent medical libraries provided in each institution, with an allowance for books and periodicals, undoubtedly stimulates the medical staff in their work.

Occupational therapy is well developed, and hydrotherapeutics and electrical equipment are generally on a high level.

Visiting rooms in wards and beauty parlours and hairdressers' shops are widespread in American mental hospitals, and are well worthy of consideration here.

Patients' libraries are often well developed, and canteens in connection with recreation rooms for staff and patients are good features.

The record-rooms are well equipped. Efficient type-written transcriptions of the medical officers' notes facilitate perusal.

The *cafeteria* or self-service feeding system is mainly discussed under the heading of Worcester, Mass.

The preserving and canning at Whitby, Canada and elsewhere are worth noting.

Soap is successfully made from waste fats at a number of institutions, and is said to more than repay the labour.

Gymnasia and efficient gymnasium classes appear distinctly beneficial.

Graphic records for the continuous baths and the electric cutters-out for dresses are points worth consideration.

It is stated that stationary steam-driers cannot be afforded on the grounds of the amount of steam used; and that in extending laundries building is economized by putting in the smaller and much more efficient forced-air driers, which also require less power.

Modes of admission.—With the passing of the new Mental Treatment Bill Britain will be in advance of even the more progressive American States. It is notable that while in private and semi-private institutions great adavntage has been taken of voluntary clauses, in the American State Hospitals, which are overcrowded, the number of these voluntary admissions is very small.

Discharges.—While the power of the medical superintendent to discharge and grant "parole" up to a year is probably an advantage, the Committee system in England appeais to be of distinct use in

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doubtful and opposed cases. Habeas Corpus and the intervention of a judge is called for in many American States in cases where an application under Section 79 would be rapidly dealt with by the committee here.

Size of hospitals.—This is a much debated point. Massachusetts limits the size of mental hospitals to about 2,000—probably a wise level. Others advocate the 4,000 level, and others again 6,000 and 10,000. The latter is mainly the lay and big business point of view, which sees all overhead charges reduced proportionately.

Medical opinion in the United States is generally against anything over 4,000 as tending to increase accidents and diminish individual attention to patients, and so lower the recovery and discharge rates. In favour of the large hospitals is their ability to give added medical and surgical facilities at a lower capitation cost. These facilities cost the same whether the institution is large or small, but in the case of the former it is spread out over a larger number of patients resident.

Other points.—None of the hospitals seen had padded rooms, but restraint was employed in some, and in all the hydrotherapy conditions would count as restraint in England. Another divergence of practice is the fact that some American mental hospitals tend to have large central dining-rooms, which is less usual in large hospitals in England; and again general bathrooms, common in England, seem unusual in the United States.

Cost of maintenance.—This is about 35*s.* a week in many State institutions in America and corresponds with 25*s.* a week or less in England. The added expenditure is usually owing to the higher costs of staff. The proportion of staff here is much the same as in America and Canada—a lower ratio generally meaning longer hours of duty.

Mental defectives usually cost distinctly less.

Clinics which in England cost up to £5 a week cost up to £10 in America, and occasionally higher. This again is usually a question of staff, as in all clinics the numbers of staff tend to equal the numbers of patients, whereas in mental hospitals the proportions are 1 : 5 of all employees and 1 : 8 or 1 : 10 of nursing staff to patients.

In general I would say, while the institutions in America and England correspond so closely that real comparison is possible, there are certain tendencies and points in American institutions which are worth adopting in England; contrarywise there are certain points in our English institutions which might be adopted with advantage in America.

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In conclusion I would like to say that I was very deeply impressed by the kindly and helpful attention I received while in America and Canada from the leading psychiatrists and other workers. Every help was given in regard to information and work, and much kindly hospitality was added. No one who has experienced this could fail to reciprocate such kindness.

It may seem invidious to mention names when all were so kind.

Dr. Hincks and Profs. Bott and Farıar gave me much help in Toronto. Dr. Adler and Dr. Hinton gave me much of their time in Chicago.

Dr. Kline and his assistants were most kind in the State Departments at Boston. Drs. Bryan and Dexter were most helpful, and I was most hospitably entertained at Wrentham in the absence of Dr. Wallace, while Dr. McFie Campbell gave me time and hospitality. Dr. White and his assistant were hospitable and kind in Washington.

Dr. Copp and Dr. Earl Bond gave me much time in Philadelphia, and Dr. Adolf Myer gave me valuable time in Baltimore.

While in New York, Mr. Clifford Beers and Dr. Floyd Haviland gave me much help, and Dr. Lowry, Dr. Little and Dr. Potter similarly showed me their interesting activities.

Such general kindness leaves a deep impression.

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AMERICAN PSYCHIATRY AND ITS PRACTICAL BEARINGS ON THE APPLICATION OF RECENT LOCAL GOVERNMENT AND MENTAL TREATMENT LEGISLATION, INCLUDING A DESCRIPTION OF THE AUTHOR'S PARTICIPATION IN THE FIRST INTERNATIONAL CONGRESS ON MENTAL HYGIENE, WASHINGTON, D.C., MAY 5—10, 1930.*

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Dr. Petrie's paper† is mainly descriptive of American psychiatric institutions, and deals only briefly in its conclusion with his impressions of American psychiatry in its various fields. My paper, however, deals principally with the latter subject and avoids the former as much as possible. It is also my duty to report on my mission as the representative of the London County Council and of the Royal Medico-Psychological Association at the First International Congress on Mental Hygiene.‡

My visit to the States was a short but intensive one. I was enlightened on many subjects and disillusioned on a number of others.

Prior to my departure on April 26, I had the privilege of reading Dr. Petrie's description of psychiatric activities in America and Canada. This was of great value to me during my visit.

I had also read a striking paper by Dr. Edwin Mapother on "Impressions of Psychiatry in America" (Sect. of Psychiat., Roy. Soc. Med., April 8, 1930), that gave me much to reflect upon.

I think, however, that my net was cast over a somewhat different and wider area of psychiatric work than in the case of either of

* *Abstracts from this paper were submitted for discussion at the Quarterly Meeting of the Royal Medico-Psychological Association held in London on May 22, 1930.*

† "*Description of Psychiatric and Allied Activities seen on an American Tour*," Journ. Ment. Sci., *July*, 1930, *p.* 419.

‡ *The author was also one of the Representatives of the National Council for Mental Hygiene and of the British Red Cross and Order of St. John Hospital Library.*

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these observers. My impressions were chiefly gained by personal contact with eminent psychiatrists and psychologists, and especially with medical directors and physicians of American State hospitals, as well as educationists, superintendent nurses, occupational therapists, and social workers of all kinds.

Among the 3,500 who registered (out of the 4,000 supporters of the Congress) were representatives of 45 of the 48 States of America. There met, at the same time and place the American Psychiatric Association, the American Psycho-Analytic Association, the American Association for the Study of the Feebleminded, the American Occupational Therapy Association and a Conference on Nursing and Nursing Education. Never in the world's history has there been such a large gathering of people actively interested in psychiatry and allied subjects.

Talks with such leaders in American psychiatry as Adolf Meyer, Haven Emerson, Earl Bond, Kirby, White, Ruggles, McFie Campbell, Vernon Briggs and many others, as well as rising men like Strecker, Ebaugh, Myerson, Williams and Tredway, impressed me with the vitality of American psychiatry. I was fortunate, too, in meeting several members of State Hospital Boards, judges and attorneys, as well as the Hon. Ray Lyman Wilbur, M.D., the Federal Secretary of the Interior. In fact my visit was practically a whole day talk on each of the seven days of the Congress, for never in my life have I answered, in so short a period of time, so many questions, most of which were very much to the point. The Congress was a strenuous week for all, and enthusiasm was as keen on the last day as on the first—this, too, in spite of a temperature of not less than 92°, and often 108° in the shade.

I had many invitations to extend my visit for some weeks to see the principal centres of psychiatric work in America and Canada. These I had to forego in order to attend this meeting, at which I had promised to speak before leaving for America.

I arrived at the Willard Hotel, Washington, on the night of May 4. The following day was spent in official calls, registration, making and renewing acquaintances, and attending Committee and Sub-Committee meetings. The first of the three short general sessions at which representatives of nations contributed their quota to the "World View of Mental Hygiene" was held at 2 p.m., and at 3 p.m. I heard some useful papers on "Convulsive Disorders" at a session of the American Psychiatric Association. Americans are finding it necessary to extend their conceptions in epilepsy.

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Having regard to much of the recent work on the subject, it is not surprising that the term "epilepsy" is becoming too narrow to include all the problems awaiting solution.

The International Congress Dinner.

That evening I attended with 1,500 others the International Dinner. It was the first time I had been present at a public dinner where no alcoholic drinks were consumed. The temperature in the room was approaching 108° F., and we were regaled with iced water. I was struck by the fact that everybody was just as merry, and the enthusiasm just as intense, and the speeches just as eloquent as if, instead of iced water, we had been drinking champagne.

The International Aspect of Mental Hygiene.

On May 6 I opened the series of Sessions "C" of the Congress. These Sessions dealt more with the psychiatric approach to mental hygiene than Sessions "A" and "B." My introductory address was on the "International Aspect of Mental Hygiene."

After exhorting my audience to think internationally for the period of the Congress and bend their interest on what happens in countries other than their own, and so bring broader conceptions to bear on home problems, I said it had become the fashion to abuse the War because nothing good had come of it. I told them that there was at least one exception, and that was in regard to the Mental Hygiene Movement. Though this was initiated by Mr. Clifford W. Beers in 1908, it did not become international until war had ceased and a stocktaking of political, social and spiritual values had commenced. Then it was that the mental hygiene movement literally leaped forward, and in a short time over thirty-five national societies for mental hygiene came into being. Of great significance, too, was the fact that the Mental Health Conference at Westminster last year had been attended by over 3,000 persons and had the support of more than 100 social organizations.

Sterilization of the Psychotic and Mental Defective.

Now, of the subjects discussed at this opening session, one at least is of special interest to local authorities at home. Quite recently a local authority widely circulated its views on it, and the last two reports of the Board of Control contain references to it. At this session sterilization was raised as part of the problem of "The Place of Genetics in a Mental Hygiene Programme."

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The opening paper was submitted by Prof. E. Rudin, Chief of the Genealogical Department of the Kaiser Wilhelm-Institut, Munich.

Prof. Rudin claimed that eugenics taught us how a human being might be born without unfortunate hereditary mental or physical tendencies.

In regard to the significance of heredity he gave some interesting statistics, based mostly on the results of his own personal investigations:

(1) If one of the parents were afflicted with Huntington's chorea, 50% of the children have the same disease.

(2) If one of the parents were afflicted with manic-depressive psychosis, 33% of the children are manic-depressive, and at least as many children mentally abnormal in other ways.

(3) Similarly, in dementia præcox or schizophrenia and in genuine epilepsy, an average of 50% of mental defectives among the children was expected.

(4) If both parents were psychopathic the percentage of abnormal children was increased and transmission of hereditary taint made more certain.

The following were the more important of the eugenic measures recommended by Prof. Rudin:

(1) Contraception—a method he thought humane and efficacious.

(2) The segregation of dangerous or helpless defectives and psychotics in institutions.

(3) The voluntary sterilization of all hereditarily diseased or defective persons he regarded as an absolute and permanent remedy. Such, he said, entailed no danger whatever to physical or mental health and left sexual life unaffected.

He claimed that every mental hygienist must also be a eugenist. He gave details of a vast scheme of recording the transmission of hereditary pre-dispositions. This would help us to learn with increasing exactitude who were " carriers " of abnormal tendencies. Prof. Rudin said it was a consoling fact that, exactly as diseases and defects were transmitted, so were the tendencies of positive qualities, talent, etc., and to foster these was one of the chief objects of mental hygiene.

My experience has been that a world's congress does not favour dogmatism. The views of Prof. Rudin were strongly objected to by a section of the meeting and his facts disputed. It was pointed out that there was no normal standard of mental health, but that it varied under different conditions of life. Types of mental disorder came and went, and other conceptions took their place,

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and none could with certainty be relied upon for statistics on heredity; human traits were not absolute, but variable qualities; and finally his scheme was not trustworthy and might lead to entirely fallacious conclusions.

In fact most of the speakers, to my surprise, regarded sterilization of the psychotic as useless and a waste of time, and my impressions obtained in conversation with eminent American psychiatrists generally was that as regards the mentally afflicted, there is no unanimity in favour of sterilization; many, indeed, scoffed at it, others avoided the subject, and some spoke strongly against it.

The position is a little different in regard to sterilization of the mental defective. It was claimed at a meeting, on May 6, of the American Association for the Study of the Feebleminded that as many as 94% of its members were in favour of permissive sterilization of mental defectives. Its greatest usefulness was in selected cases, which, after suitable training, were considered fit for parole, but it should be applied cautiously. It should only be done with the consent of parent or guardians, and at the recommendation of a competent board of medical specialists, and at the "hearing" a lawyer should be present to protect the interests of the patient.

I could not help thinking that the recent increase of sterilization in America was largely due to the medical profession having been "vamped" by lay opinion—a thing easily done in America, for to be successful there one must go with public opinion and please one's employers, or otherwise fade out completely.

In summing up the debate I advised "Looking before you leap." What we wanted to know first were the causes of primary and secondary amentia.

Probably a big proportion of mental defectives were cases of secondary amentia which could be prevented. The adoption of an uncertain remedy like sterilization might put off such inquiry for years. I told them of the efforts we were making, so far without success, to induce our Government to undertake such an inquiry. I spoke to them about Sir Frederick Mott's ante-dating theory, and of the danger of attaching exaggerated importance to any single method of prevention or cure of mental disorders, and of how mental hygiene was a mosaic of dynamic approaches.

"Prohibition."

At the same session a delicate situation arose towards the end of the discussion on "Alcohol as a Problem in Mental Hygiene." It

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was evident that the feeling for and against "prohibition" is intense in America. Some of those present seemed determined that the World's Mental Hygiene Congress should pronounce against prohibition. Prof. Jan Piltz, of Poland, proposed a motion to the effect that it was one of the principal aims of the mental hygiene movement to combat the over-use of alcohol so destructive to character, etc. The anti-prohibitionists proposed that "Education should precede legislation in this matter." Thanks to the aid of Dr. Bernard Sachs, who was present, the situation ended satisfactorily. The amendment was ultimately defeated and the original motion agreed to, but not without my promise that the amendment as well as the motion would be reported by me to the Committee on Resolutions.

The Organization of the Mental Hospital in the Mental Hygiene Service.

I had to vacate the chair for half-an-hour in order to take a prearranged part in a discussion at Session "B" on "The Organization of the Mental Hospital in the Mental Hygiene Service."

As the reorganization of the psychiatric services in this country is at this time occupying the attention of local authorities and their medical advisers, an epitome of the opening paper, submitted by Dr. Toulouse, Medical Director of the Psychopathic Hospital of Paris, may be helpful.

Dr. Toulouse has played a very important part in the evolution of the psychiatric services of his country. Since 1896 he has advocated (1) voluntary mental hospitals, (2) the hospitalization of asylums, and (3) the active prophylaxis of mental disorders.

He holds that the pivot should be a psychiatric hospital, to which voluntary patients can come or be brought without certification or the authorization of any administrative or judicial authority. Only formalities of a financial nature should be imposed, and these, of course, would not apply to urgent cases. Every asylum should have, as an integral part of it, such an organization as this, or should be transformed for the most part into an "open" hospital, leaving "closed" only such parts as were necessary to confine unwilling or dangerous cases. There should be provision for research, training centres for nurses and social workers, and facilities for post-graduate psychiatric education and auxiliary services. There should be social workers for making environmental inquiries in new cases, and for "after-care" and "follow-up" work.

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On December 8, 1920, with Génil-Perrin, he founded the "Ligue française d'hygiene mentale," and on June 1, 1922, one of his great ambitions materialized in the opening of the Mental Prophylaxis Centre for the Department of the Seine, the core of which is the *Hôpital psychiatrique Henri Rousselle* at the Asile Sainte-Anne in Paris.

Dr. Toulouse told us that he had submitted to the Minister of Public Health of France a scheme for the re-organization of the psychiatric services. Briefly he proposes the formation of (1) a Central Mental Prophylaxis and Hygiene Service, and (2) Regional Services of the same kind.

We are not much interested in this country in a new State Central Service, the duties of which would include organizing, co-operating and stimulating mental-health work, and which would have a Council presided over by an experienced psychiatrist. Propaganda would include public education on mental hygiene, the raising of funds for special objects, etc. Such work could, if necessary, be done by a Committee of the Board of Control, though a purely voluntary body—the National Council for Mental Hygiene—could do all these duties effectively, given adequate financial support.

The duties of the Regional Services, as outlined by Dr. Toulouse, are, I think, of more interest to us. In an administrative area or combination of areas such a service would bring together all local forces engaged or likely to be useful in a stern fight against the prevalence of psychopathic states. Propaganda would include the establishment of centres for the direction of home care of mental cases not needing hospital treatment; the improvement of treatment in mental institutions; provision for voluntary in-patients; research; the psychiatric education of nurses and social workers; the encouragement of mental prophylaxis in schools, prisons, industries, etc. This *propaganda*, I think, could be also more appropriately done by local voluntary mental hygiene bodies.

The *actual* work of Dr. Toulouse's regional services, if established in France, would be (*a*) reporting on environment in cases of mental disorder; (*b*) combating alcoholism and preventing crime and suicide in psychopaths; (*c*) the care of mental patients at home, especially in rural districts; (*d*) the admission to hospital of mental cases; (*e*) after-care; (*f*) encouraging eugenics; (*g*) collaboration with the medical services of schools, prisons and labour centres; (*h*) the supervision of sports and amusements (such as moving pictures) from the mental hygiene point of view; (*i*) investigating child delinquency and mental cases for the Courts; (*j*) the

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examination of recruits or soldiers for discharge on mental grounds; (*k*) the mental examination of immigrants.

The creation of such bodies was advocated by me at the first Lunacy Conference on 1922, and I have recently urged that local authorities should organize, under the Local Government Act, 1929, social services in the prophylaxis of mental disorders (*vide* "The Admission of Mental Patients to In-Patient Treatment," *Journ. Ment. Sci.*, October, 1929).

The novel points in this programme are, of course, the provision of home care of mental cases, which might be distinctly useful in association with cottage hospitals in rural districts, the mental examination of immigrants, the mental hygiene aspect of cinematograph entertainments, closer psychiatric contact with delinquency cases and discharged prisoners.

What Dr. Toulouse proposes for France is on the same lines as those on which mental services in America have developed as regards psychopathic hospitals and clinics and the State hospitals. The American psychiatric services include State hospitals and also social work, and there has been an enormous development in recent years in regard to the latter. I will speak of this later; at the moment I shall content myself by summarizing my contribution to a discussion which followed Dr. Toulouse's paper.

I pointed out that the geographical situation of the public mental hospital in England in most cases would prevent it from becoming the centre of such community services as outlined by Dr. Toulouse or as largely found in America. In such a comprehensive psychiatric service there is danger of psychiatry going back to a position of isolation from general medicine and the social services. I told them that psychiatry ought to permeate all branches of medicine and social service. Mental prophylaxis and mental after-care, etc., would then become an integral part of their work. Psychiatry should, indeed, concentrate on research and the actual treatment of mental disorders and defects; it should be a great propaganda agency in these matters, and have the co-operation of all branches of medical science and the aid of its own special "clinico-social" and "after-care" workers.

As regards the patient, I thought that under such a system as that proposed by Dr. Toulouse he would be in danger of never being able to forget his mental illness, and might be labelled for life, like a tuberculous patient who never, so long as he lived, escaped the kindly attentions of officials wherever he went. "Follow-up" work was no doubt good for statistics, but might be bad

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for the patient; in any case "follow-up" work could be done by general social workers with some knowledge of psychiatry. The special after-care workers' duties were best ended on the patient resuming satisfactorily his civil responsibilities. Otherwise such a patient might never be free from a suspicion that the mental hospital still had an eye on him, wherever he was located. This might result in a persistent sense of inferiority, that he was not the equal of his brother citizens, which would be not for his good and might reduce him to a state of economic dependency. Thus, I recommended that specialized "after-care" should be limited to periods thought necessary by the medical staff of the mental hospital.

The Foundation of the International Committee for Mental Hygiene.

On May 6 I assisted in the founding of the Permanent International Committee for Mental Hygiene, and was elected a member of its Executive Council. The function took place in the hall of the National Academy of Sciences—the first time permission had been given for this hall to be used by any external body. This honour was due to the intercession of Dr. William H. Welch, a Past-President of the Academy, who presided on this occasion.

I was entrusted with the first motion, which was one extending congratulations to the Founder of the Mental Hygiene Movement —Mr. Clifford W. Beers.

The Inaugural Session.

This, perhaps my heaviest day at the Congress, ended with the ceremonial Inaugural Session of the Congress, which was held in Constitution Hall; no fewer than 3,000 members and guests were present, the presiding officer being Dr. William H. Welch, of Johns Hopkins University.

It was a stirring occasion that impressed on us the international character of the Congress. On the immense platform were seated the representatives of fifty-three countries from all six continents, some of the delegates in the picturesque garb of their native land. Each representative was named and presented to the assembly by Dr. Arthur H. Ruggles, Chairman of the Committee on Organization. A particularly cordial reception, it seemed to me, was given the British delegates, headed by Sir Hubert Bond, the accredited representative of H.M. Government. There was no time to read out each delegate's credentials, but that of Sir Hubert Bond was published later, and is as follows:

"Ministry of Health,
Whitehall, S.W. 1, London;
15th April, 1930.

"Dear Sir Hubert Bond:

"His Majesty's Government wish to convey to the First International Congress on Mental Hygiene, through you as their delegate, a cordial message of goodwill and sincere wishes for the success of the Congress.

"It is well recognized that the movement, which recently celebrated its

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majority and to the strength of which this International Congress is powerful testimony, was initiated in Connecticut, and is the outcome of one who possessed the genius of applying the lessons of personal illness to the needs of others. Firing the imagination of an enlightened public, it gathered in the United States of America an impetus which has been the originating force of many National Societies for Mental Health which have been formed since in various parts of the world. Lively satisfaction therefore was felt when it was learnt that Washington had been selected as the place in which to hold the First International Congress on Mental Hygiene.

"It is a commonplace that disease, whether physical or mental, knows no frontier, and it behoves everyone to bring into the common stock all the knowledge and experience that he may have acquired. So far as Mental Hygiene is concerned, the Congress will open the way for a systematic and world-wide interchange and examination of that knowledge and experience, and by so doing will, it is hoped, mark an important stage in the campaign against one of the saddest and most distressing afflictions known to mankind.

"Yours sincerely,

(Signed) "ARTHUR GREENWOOD."

The speakers were the Rev. Anson Phelps Stokes, D.D., in whose home in Connecticut the first mental hygiene society was founded in 1908 by Mr. Clifford W. Beers; the Founder himself, who was received with an ovation rarely accorded to any man; and Dr. William A. White, who gave the Presidential Address, telling us that "life's values, from the standpoint of mental health, are not expressed in terms of the chemistry of nutrition, or the integrity of the heart-muscle, or of any other organ, but in terms of character."

THE TYPE OF PERSONNEL REQUIRED FOR MODERN HOSPITALS FOR MENTAL DISEASES.

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A summary of his paper is as follows:

"The problem of individual treatment in the large aggregations of patients in hospitals for mental disorders has in recent years assumed larger proportions than ever."

"Although hospital facilities inherited from a less enlightened period than the present are inadequate in type and extent and add greatly to the difficulty of individual treatment, lines of progress already established indicate better provision for such treatment through improvements in organization and co-operation. Thorough examination and study of patients as they are admitted to the hospital, the preparation of a complete history, and staff conferences on the cases are necessary as a foundation for adequate understanding and treatment of the individual patient in the various departments of the hospital.

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for special therapeutic measures are resources of great value in individual treatment.

"Courses of instruction and training for the members of the nursing organization, and the employment of trained therapists in occupational, physical, and recreational therapeutic measures, are contributing greatly to the standards of personal treatment.

"Hospital out-patient clinics and the employment of trained psychiatric social workers have been the means of extending the services of the hospital to the further treatment and adjustment guidance of patients after they have left the hospital.

"These developments are opening the way to a more precisely organized plan of treatment for individual patients, through co-operative methods in which the physician is able to use more effectively the more intelligent and well-trained nurses, therapists, and social workers, that are being added to the hospital's personal-service organization.

"Advancement in this direction, by adding to the character and capacity of the hospital as an active agency of psychiatric service to the community, will increase its value in the field of preventive psychiatry and mental hygiene."

I draw particular attention to this paper because it could well have been written of the modern British mental hospital, and shows that the trends of public mental hospital work in America and in Great Britain are, with few exceptions, identical. I took the opportunity of ventilating my scheme of the personnel of a mental hospital service.

I won the symapthy of my audience when I spoke of the difficulty in obtaining and retaining suitable medical officers; of satisfying their particular leanings; of meeting discouragement in regard to promotion; and of creating end-posts worth working for; in fact I summarized my scheme as expressed in my Presidential Address of 1926 to the Royal Medico-Psychological Association. To carry out such a scheme small States in America as well as small local authorities in Great Britain would have in some matters to pool their efforts.

Briefly it is that a medical officer entering a mental hospital service after gaining psychiatric training and experience may progress along one of three lines and ultimately become a medical superintendent, a clinical director, or a chief pathologist, all of whom should be paid at approximately the same rate. I then described in detail the particular duties of these officers and their relationship to each other. I followed this up by suggesting the creation of the post of Registrar to be on the line of progress toward the medical

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superintendentship. Full-time gynæcologists, radiologists, ear, nose and throat surgeons, and dentists I recommended as essential to good clinical work. I then touched upon team work under supervising specialists and of the need for trained psychologists, clinical students (whose presence keeps a hospital alive and up-to-date), occupational therapists, dance and rhythm mistresses, masseuses, industrial instructors, etc. Finally I said it was becoming increasingly necessary to supplement the laboratory staff by a bio-chemist.

My remarks were received with some interest. For one thing the question, "Why isn't more research work being done in the State hospitals in the United States?" had been recently raised in an important American medical journal. The reasons submitted were (1) lack of time—too many patients allotted to each physician, and overcrowding; (2) lack of training in research technique; (3) lack of funds—no allowance from the State; (4) lack of interest—medical officers were content to carry out the pioneer work done elsewhere.

Is not this state of affairs true of many public mental hospitals at home?

Dr. Cotton's Work at Trenton.

The complaint was mainly in regard to research and pioneer clinical work. Later I was to witness for a few days a remarkable exception to this criticism of State hospital activity. It was at the New Jersey State Hospital, Trenton, where every new case is the subject of research, and where pioneer clinical work is, and has been done abundantly. What I saw made me reflect deeply on the future of American psychiatry. I have never concealed my admiration for Dr. Henry A. Cotton's work. His surprising results in the treatment of functional mental disorders, by eradication of septic conditions, have been much criticized in America, but a recent searching and independent State inquiry revealed the fact that, after satisfying every criticism, his recovery-rate reckoned on a ten years "follow-up" was in this particular group of cases four to five times that of any other State hospital.

It means, of course, that an adequate and specialized staff is working at full pressure for almost every day in the week, with a consequent curtailing of social and family life. It is difficult and anxious work which cannot be relinquished until the toxic agent at work has been completely overcome. One only need compare this strenuous life with that of the psycho-therapist and the psycho-analyst in a comfortable consulting-room or that of experimental workers in a psychological laboratory, where "life or death" are not held in the balance during treatment, and where routine work can give place to reasonable recreation, to find one reason and a perfectly natural one for the unpopularity of Dr. Cotton's methods.

Of course it would be foolish to expect an unlimited supply of enthusiasts like Dr. Cotton and his assistants, but will not the American public, when thoroughly alive to Dr. Cotton's results demand such in all State hospitals? Dr. Cotton at the moment is like Ibsen's medical officer of health—a strong man standing alone and feeling secure in his isolation because he is conscious of the strength of his cause. Only one thing will bring Cotton's school down, and that is forgetfulness of the fact that mere restoration of the nervous and somatic metabolism to health will never completely cure a disordered mind. Psycho-therapy is absolutely necessary for the extinction of bad habits in thinking, feeling, and acting. These bad habits may have originated in pathological conditions, but they can continue, under physiological conditions—a possibility too often overlooked by the materialistic school.

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"These developments are opening the way to a more precisely organized plan of treatment for individual patients, through co-operative methods in which the physician is able to use more effectively the more intelligent and well-trained nurses, therapists, and social workers, that are being added to the hospital's personal-service organization.

"Advancement in this direction, by adding to the character and capacity of the hospital as an active agency of psychiatric service to the community, will increase its value in the field of preventive psychiatry and mental hygiene."

I draw particular attention to this paper because it could well have been written of the modern British mental hospital, and shows that the trends of public mental hospital work in America and in Great Britain are, with few exceptions, identical. I took the opportunity of ventilating my scheme of the personnel of a mental hospital service.

I won the symapthy of my audience when I spoke of the difficulty in obtaining and retaining suitable medical officers; of satisfying their particular leanings; of meeting discouragement in regard to promotion; and of creating end-posts worth working for; in fact I summarized my scheme as expressed in my Presidential Address of 1926 to the Royal Medico-Psychological Association. To carry out such a scheme small States in America as well as small local authorities in Great Britain would have in some matters to pool their efforts.

Briefly it is that a medical officer entering a mental hospital service after gaining psychiatric training and experience may progress along one of three lines and ultimately become a medical superintendent, a clinical director, or a chief pathologist, all of whom should be paid at approximately the same rate. I then described in detail the particular duties of these officers and their relationship to each other. I followed this up by suggesting the creation of the post of Registrar to be on the line of progress toward the medical

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superintendentship. Full-time gynæcologists, radiologists, ear, nose and throat surgeons, and dentists I recommended as essential to good clinical work. I then touched upon team work under supervising specialists and of the need for trained psychologists, clinical students (whose presence keeps a hospital alive and up-to-date), occupational therapists, dance and rhythm mistresses, masseuses, industrial instructors, etc. Finally I said it was becoming increasingly necessary to supplement the laboratory staff by a bio-chemist.

My remarks were received with some interest. For one thing the question, "Why isn't more research work being done in the State hospitals in the United States?" had been recently raised in an important American medical journal. The reasons submitted were (1) lack of time—too many patients allotted to each physician, and overcrowding; (2) lack of training in research technique; (3) lack of funds—no allowance from the State; (4) lack of interest—medical officers were content to carry out the pioneer work done elsewhere.

Is not this state of affairs true of many public mental hospitals at home?

Dr. Cotton's Work at Trenton.

The complaint was mainly in regard to research and pioneer clinical work. Later I was to witness for a few days a remarkable exception to this criticism of State hospital activity. It was at the New Jersey State Hospital, Trenton, where every new case is the subject of research, and where pioneer clinical work is, and has been done abundantly. What I saw made me reflect deeply on the future of American psychiatry. I have never concealed my admiration for Dr. Henry A. Cotton's work. His surprising results in the treatment of functional mental disorders, by eradication of septic conditions, have been much criticized in America, but a recent searching and independent State inquiry revealed the fact that, after satisfying every criticism, his recovery-rate reckoned on a ten years "follow-up" was in this particular group of cases four to five times that of any other State hospital.

It means, of course, that an adequate and specialized staff is working at full pressure for almost every day in the week, with a consequent curtailing of social and family life. It is difficult and anxious work which cannot be relinquished until the toxic agent at work has been completely overcome. One only need compare this strenuous life with that of the psycho-therapist and the psycho-analyst in a comfortable consulting-room or that of experimental workers in a psychological laboratory, where "life or death" are not held in the balance during treatment, and where routine work can give place to reasonable recreation, to find one reason and a perfectly natural one for the unpopularity of Dr. Cotton's methods.

Of course it would be foolish to expect an unlimited supply of enthusiasts like Dr. Cotton and his assistants, but will not the American public, when thoroughly alive to Dr. Cotton's results demand such in all State hospitals? Dr. Cotton at the moment is like Ibsen's medical officer of health—a strong man standing alone and feeling secure in his isolation because he is conscious of the strength of his cause. Only one thing will bring Cotton's school down, and that is forgetfulness of the fact that mere restoration of the nervous and somatic metabolism to health will never completely cure a disordered mind. Psycho-therapy is absolutely necessary for the extinction of bad habits in thinking, feeling, and acting. These bad habits may have originated in pathological conditions, but they can continue, under physiological conditions—a possibility too often overlooked by the materialistic school.

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During my visit I saw no evidence of neglect in this direction at Trenton though there may be room for greater pressure in the practice of modern psycho-therapy. As the Central Station for Mental Hygiene for New Jersey is situated at Trenton Mental Hospital, the amount of social psychiatric work—under the direction of a special medical officer—being done there is enormous, and what is this but practical psycho-therapy?

I was given the opportunity, often afforded foreign visitors, in an hour's address to Dr. Cotton's medical, nursing and specialist staff (including a psychologist who had just joined) and social workers, of driving this viewpoint home. I spoke also of dental work in modern psychiatry, but I have no time to enlarge on this subject now.

World View of Mental Hygiene: Great Britain.

I have already mentioned the General Sessions held to acquaint members of the Congress with the progress of mental hygiene throughout the world. I have now to tell you that the Committee on Programme appointed me to speak on behalf of Great Britain at the Session on May 7 on the "World View of Mental Hygiene." My speech was reported as follows:

"Addressing a large audience on 'World View of Mental Hygiene' on Wednesday afternoon, May 7, Colonel Lord said that never were the position and prospects in Great Britain in regard to mental hygiene brighter than now. An amending Local Government Act came into force on April 1, 1930, abolishing the Poor Law authorities (which dated from the time of Queen Elizabeth) and transferring all their responsibilities and duties under the Poor Law and other Acts of Parliament to the county and county borough authorities. Thus, one statutory authority in each local government administrative area would, for the first time, be able to review the whole field in regard to the care and treatment of the sick poor, including those mentally afflicted or defective, and to take such steps as seemed desirable to reorganize and, if necessary, supplement existing provisions."

"The great reproach, that no case of mental disorder needing public assistance could receive care and treatment without the intervention of the Poor Law authorities and, may be, admission to a Poor Law institution, was by the Act removed once and for ever. 'This,' he remarked, 'was the first red-letter day in modern British Mental Hygiene.' Again, it was almost certain that on January 1, 1931, if the Mental Treatment Bill, 1929, became law, the second and perhaps even greater reproach would be removed that a poor mental patient, in need of or desiring treatment (*i.e.*, willing to undergo treatment in an institution), could not obtain it without previous certification or a Justice's order. At the same time the use of the word "pauper" to an assisted patient would be abolished.

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"The Mental Treatment Bill of 1929 was a great step forward in the care and treatment of the mentally afflicted, and included better provision for research and "after-care." The long struggle with legal authorities to yield to a gathering public opinion that certification should be the last and not the first resort in cases of mental disorder—which meant in regard to those cases roughly classified as non-volitional (acute mental illness of all kinds unable to apply for voluntary treatment or to object rationally to confinement) an abrogation of the common law of the liberty of the subject—has been ended on terms favourable to the views held by the National Council for Mental Hygiene. Non-volitional and voluntary patients would under the Bill be admitted, without incurring the stigma of certification as persons of unsound mind.

"The provision for voluntary cases was to be optional, but will no doubt be widely adopted.

"The provision for the non-volitional cases was to be compulsory on all local authorities, but such cases must be likely to benefit by treatment and were to be surveyed (if they had not recovered or been certified or become voluntary patients) after a total period not exceeding twelve months.

"'So, January 1, 1931,' he said, 'was likely to be the second red-letter day in Modern British Mental Hygiene.'

"Continuing, Colonel Lord said that the outlook was bright and possibilities great over the whole field of mental hygiene. The State administration of the welfare of the mentally defective, which took its origin in the Mental Deficiency Act of 1913, was second to none in the world. It was aided in administrative areas by thoroughly efficient and up-to-date voluntary associations which received grants from public funds. The position in Great Britain regarding the provision for dealing with the backward, maladjusted or exceptional child was not so favourable, but a great step had recently been taken to improve matters by the establishment of the Child Guidance Council in London. The first fruits of this enterprise were the founding of a really up-to-date Child Guidance Clinic, which had been placed under the direction of Dr. William Moodie. Colonel Lord, as a member of the Executive Committee of that Council, expressed the Council's gratitude to the Commonwealth Fund for its great generosity, which had enabled such an important branch of sociological work to make this great advance in England.

"Speaking of London, he said that the London County Council commenced its efforts to establish modern psychopathic hospitals and clinics in 1888, but the Parliamentary situation had always, up to recent years, been against it. Its several schemes had gone abroad and had been adopted elsewhere with fruitful results. Nevertheless, many important advances had been made, in fact in several directions of mental hygiene, London had set the world a splendid example."

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Reception by the Secretary for the Interior.

At 4 p.m. on the same day, May 7, there occurred one of the few afternoon social events of the Congress, and even it was in part educational. We had been given to expect that each day's work would end at 1 p.m., except for the big public meetings in the evenings. I found this afternoon leisure idea to be a myth, as did most of the delegates. However, our visit to the Ministry of the Interior at the invitation of Dr. and Mrs. Wilbur was a very pleasant exception. We were first shown some splendid Government cinematograph records of the communal life among the Indian tribes in the National parks reserved fo rthem, and afterwards were most kindly entertained to tea. It was like a family party, and despite the intense heat, most enjoyable.

Reception by the President of the American Psychiatric Association.

At 10 p.m. members of the Congress were received by the President of the American Psychiatric Association, Earl D. Bond, M.D., in the large and beautiful ball room at the Willard Hotel, the headquarters of the Congress. Dancing continued until 1 a.m.

Reception by President Hoover.

The Honorary President of the Congress was the President of the United States, the Hon. Herbert Hoover. The reception he gave at White House, on May 8, at 12.45 p.m., to 1,200 members of the Congress, was symbolic of the importance that America attaches to the mental hygiene movement. It occurred on a broiling hot day, a real heat-wave of 104°–108° F. in the shade.

Reception and Lunch by American Editors.

As the temperature had reached 108° F. in the shade, I was glad to take shelter shortly afterwards in a cool verandah at the Racquet Club. The occasion was a luncheon given by the Editorial Board of the *American Journal of Psychiatry* to all the editors of neurological and psychiatric journals present at the Congress. Dr. Edward N. Brush presided, and my name was coupled with the toast to the "Guests," as being an editor of the oldest psychiatric journal there represented. In my reply I spoke of the assistance given voluntarily to the Journal by junior psychiatrists and of the policy of the *Journal of Mental Science* to encourage them in their career. Dr. G. Alder Blumer who was much impressed by this union of work of old and young supporters of the Journal, then recited from memory the following poem to a delighted audience :

THE DINOSAUR.

Behold the mighty Dinosaur,
Famous in prehistoric lore,
Not only for his weight and length
But for his intellectual strength.
You will observe by these remains
The creature had two sets of brains—
One in his head (the usual place),
The other at his spinal base.
Thus he could reason *à priori*
As well as *à posteriori*.
No problem bothered him a bit,
He made both head and tail of it.

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So wise he was, so wise and solemn,
Each thought filled just a spinal column.
If one brain found the pressure strong,
It passed a few ideas along;
If something slipped his forward mind,
'Twas rescued by the one behind;
And if in error he was caught
He had a saving afterthought;
As he thought twice before he spoke,
He had no judgments to revoke;
For he could think without congestion
Upon both sides of every question.

By the late Bert Leston Taylor, columnist of the *Chicago Tribune*. (Quoted in Wiggam's *The Next Age of Man*, pp. 182–3.)

Mental Hygiene in other Departments of Medical Practice.

The same evening, in the Constitutional Hall, Sir Maurice Craig, C.B.E., addressed a large audience of members of the Congress and the general public on "Mental Hygiene in other Departments of Medical Practice." It was a scholarly utterance, and Sir Maurice, who was listened to intently, received a great ovation on resuming his seat. The British delegation had good reason to be proud of their countryman that night.

In the course of his address, Sir Maurice Craig said that it was becoming increasingly evident that the mental hygiene movement was one of the greatest medical movements of modern times. He continued: "The work that the National Councils for Mental Hygiene have initiated is already proving its value, and will increasingly continue to save many persons from the severer forms of mental disturbance. But its value does not end here; it is a movement which extends far beyond the sphere of pathological states, for it finds a place and often an important place in all human matters and activities.

"Perhaps the most amazing thing of all is the limited place that the study of mind occupies in the field of general medicine to-day. In England, for instance, teaching with regard to minor mental disturbances is almost non-existent, and not 2% of questions in examination papers is devoted to matters appertaining to mind. We are striving to get this altered, and the wonderful lead that America is giving must make its mark on the minds of thoughtful men in our Universities as well as those of the United States.

"The custom in the past has been to place mind disturbance in a water-tight compartment by itself—in other words, to divorce it from the field of general medicine. The effect of this has been on the one hand to develop a warped idea of mental disorder, and on the other to fail to appreciate that in many of the so-called bodily diseases the mental attitude towards the disorder may be 50%, 60%, or even 70% of the illness for which the patient seeks relief. And it is to be remembered that the bodily disorder itself may have been determined by a minor mental disturbance.

"The whole trend of modern medicine is towards the prevention of disease, and to do this we must understand the beginnings of disease. This means that the laity have to be let into some of the secrets of medicine. 'My vision of the physician of the future,' he said, 'is a man whose duty will be to keep his patients as far as possible free from disease.' Once a person has suffered from a disease he may remain for ever scarred by it to a greater or lesser degree. Therefore it is of infinite importance to be able to observe the

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early phases, and what is true of physical disorder is equally true of mental disorder, and it is here that the mental hygiene movement plays so important a part.

"The National Councils for Mental Hygiene are not the exponents of any one school of thought; their work lies in no parochial activity, therefore their vision must be very wide. Amongst their many duties they must endeavour to bring a fresh inspiration into the old and tested methods of medicine. The work is not easy and the critics are many. Mind disturbance has long been regarded as almost synonymous with insanity. 'Most of our physicians and surgeons have not been taught to think of mind-reaction as we have learned to do,' Sir Maurice Craig stated, 'and, although they are rightly jealous of all the truths that experience has taught them, they may, to our thinking, reach far higher levels by embracing the verities which observation and experience have impressed upon us.

"'A great responsibility rests upon us to be ceaseless in our endeavour to advance the subject which has brought us together to-day. Mental hygiene has its place, and no insignificant place, in health and disease; it touches upon all the activities of life, and in consequence it must play a great part in bringing about human happiness.'"

Mental Hygiene and World Health.

Sir Maurice was followed by Dr. René Sand, Technical Councillor of the League of Red Cross Societies, who read a remarkable paper on "Mental Hygiene and World Health." Of special interest to local authorities was his reference to the economic and social services. The administrative services in every country were managed by the State, but the economic and social services were divided between public authorities and private initiative. The social services were certainly justified from a humanitarian view-point, but unproductive when they took care of the incapables and incurables. They were essentially productive in the sense that morals, education, public health, contentment, did not play a lesser part in the production and prosperity of a nation than did capital and machinery. He gave us an idea of the proportion of the national income expended by the State in social services: Germany, 15%; England, 11%; United States, 5%. If, however, expenditure on social services was reckoned in terms *per capita* of the average individual income, it was from 40–50 dollars a year, partly from private and partly from State money. In Germany, public authorities did about 90% of this work; in England, 80%; and in America 60%. The remainder was voluntary work. In most nations 80% of the budget was being expended in paying the cost of past or future wars.

It would be well, while in this narrating frame of mind, to conclude the chronicles of my personal participation in the proceedings of the Congress.

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The Solicitude of Dr. Vernon Briggs.

I could not have withstood the intense heat in carrying out all the daily work that fell to my lot but for the kindness of Dr. Vernon Briggs, who from the first day of the Congress took my material well-being into his keeping. Whenever there was an hour to spare, a comfortable car would take me into the altitudes of the surrounding country. We nearly always managed to pass through the unique Zoological Park, which appeared to be without entrance or exit—merely a part of the country-side. Massachusetts is gratefully in debt to Dr. Vernon Briggs for "Briggs' Act," 1921, in addition to many other provisions for modern psychiatric treatment and research, but the gratitude it feels is not more than I do for his care of me, and I am not the only one with happy recollections of his hospitality; he was kindness itself to all the Britishers he came across.

Visit to St. Elizabeth's Hospital, Washington.

In the afternoon of May 9, the President of the Congress, Dr. William A. White, invited all of us to St. Elizabeth's, a famous American State hospital accommodating, in 1929, 4,331 patients, and admitting over 700 patients annually. It was difficult to realize after passing the park gates that one had entered the grounds of a mental hospital. There were many big trees, big buildings, and broad highways, peopled as in a town. There was a big shop almost like city stores, with the sign of the Red Cross, and a club house: both were much frequented. As to who were patients and who were visitors or members of the public one would never be sure. Windows everywhere were barred, and gauze netting outside. I asked my American friends whether this was common in American State hospitals, and the reply was in the affirmative. Obviously barred windows in mental institutions had not, in America, the strong disapproval they had in England.* As in many of the American State hospitals, there was a large social service department, in this case with 2,512 visits to its credit during 1929. The American Red Cross maintained at the hospital a *personnel* under a field director. Its work comprises welfare, entertainments and athletics. Under the most able supervision of Dr. White the large and varied medical staff produced nearly forty contributions to current literature during the year.

"Losts and Forgottens" in "Back Wards."

In the Annual Report for 1929 one reads that "The work of salvaging the 'back wards' continues to receive the attention of the staff." After describing the successful results of the work of specially posted medical staff there, the report concludes that "there seems to be a monthly progressive improvement, not only in the activities of the patients, but in their general appearance." I heard also of similar work at Trenton.

The fact that work of this kind is necessary, and that there should be in chronic wards "losts or forgottens" needing salvage, I commend to the earnest consideration of those in favour of large mental hospitals.

My visit, however, made me wonder whether, if we are to be as candid as the Americans, such medical explorations could not well be made at home in similar regions in our mental hospitals with 2,000 patients and over.

This rummaging for cases to cure is symbolic of the faith and enthusiasm Dr. White or Dr. Cotton bring to bear on their daily work. It is but natural

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* "*In Summer, ventilation by windows may be secured in all climates. In America such ventilation is more largely needed than in Europe, on account of the greater heat, both day and night. Therefore, it is needful that windows should open more widely than the five inches above and below, which is customary in the latter part of the world. To permit this, screens of wire or guards of some kind are more needed here than there.*" *Abstract from* Reports on the Construction and Equipment of Hospitals for the Insane, State of Indiana, *by Dr. J. G. Rogers, December* 3, 1884.

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that such qualities meet with reward. "Seek and ye shall find" acquires a new meaning for, having found, they do cure such cases.

But such voyages of discovery would not be needed if local authorities were to estimate more accurately when deciding upon the establishment of large mental hospitals. They should be impressed by their advisers to provide facilities for curing new admissions which were adequate for this purpose, and more proportionate to the size of the hospital and the medical care of chronic patients, to prevent cases passing into chronic wards still in their curable stages, thus jeopardizing their prospects of recovery. If this were done they would find that large mental hospitals were not really so economical either in money or human lives as they were thought to be.

The following abstract from *A Historical Sketch of the Willard Asylum for the Insane, New York*, dated 1887, referring to events in 1866 (when its establishment was before the Legislature), seems strangely incongruous to-day: "For the first time the important principle is recognized that the chronic insane poor are equally, with the acute recent cases, entitled to proper care and treatment under State supervision; and any State which neglects to provide for all this unfortunate class by the establishment of a humane comprehensive system of care, is guilty of injustice and partiality."

But as regards treatment of recent cases, what magnificent equipment generally, and what fine work done by the staff, both alone and in co-operation with Johns Hopkins University Hospital! We were received by Dr. White and his charming lady and given a hearty tea.

Visit to the New York Psychiatric Institute.

I had not the opportunity of vising the New York Psychiatric Institute until the afternoon of the day before I left America. I had only time to see the "high spots." Owing to the long illness of Prof. George H. Kirby, the Medical Director, its organization as a research and teaching centre has not yet been completed. I am looking forward to seeing it again, as I was full of admiration for what I did see and hear through the kindness of Dr. Howard W. Potter, the Assistant Medical Director. I had the pleasure of an hour and a half's talk with Dr. Kirby at his hotel, where I also met the architect who designed the new medical centre of the Columbia University and other famous buildings in New York and elsewhere.

"Reading" for Mental Patients.

I now come to my last official act, which was to present a message to the Congress on behalf of the British Red Cross Society and Order of St. John Hospital Library.

A place could not be found for me until the last day of the Congress at Session "A," at which I made my last speech and the last speech of the Congress.

I spoke of the importance of suitable reading for patients in general and mental hospitals. America was in the happy position of having a well-organized State Hospital Library Association, which issued an enormous number of books to hospital libraries. In this work America was in considerable advance of England. I described how the British organization I represented took up this work at the conclusion of its war activities, and now issued about 20,000 volumes a year to our hospitals, including mental hospitals.

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A point I made, and which it was decided should form the subject of a discussion at the next Congress, was that such books should be thoroughly "vetted" before they were issued. I told them that I knew of no greater disaster to a patient recovering from some illness, especially a mental illness, than handing to him an unsuitable book, and how great the benefit, in many cases, of reading a carefully selected book, designed to bring rest and contentment to the tired or troubled mind.

"Thinking Internationally."

For the first time in my life I confess to being the author of a "slogan." "Thinking internationally" was the subject of my first address, as I have already told you. It was also the subject by request of a last message to the Congress.

> "The establishment of a Permanent International Mental Hygiene Committee marks for all time the recognition by all nations that the highest conception in human relations is the dominance of reason over emotion in the moulding of personality in such a fashion as to bring out the finest traits of human character. There can then come about an understanding between nations freed from the domination of national pride, prejudice or economic factors and one in which social, moral and spiritual values will have first place. We have been thinking individually and nationally; we have now to learn to think internationally. To bring these international thoughts to bear upon individuals and nations is the mission of the International Committee for Mental Hygiene. Its establishment is thus the commencement of a new era in the progress of humanity."

America's Attitude to Psychiatric Problems and Some Reflections Thereon.

Having now completed my obligation to give an account of my official mission at the Congress I feel free to talk about the work of the Congress generally and to make some reflections on America's attitude to psychiatric problems. I will try to be brief in saying what I feel I ought to say.

Now there were fifty-one sessions, and no less than forty-five major subjects discussed by 300 speakers.

I should like to say that as regards the addresses and speeches of the British delegation the universal opinion was one of genuine admiration. "Small in number but of the best" I heard one prominent American remark of the British delegation.

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The British Delegaton: American Impressions.

Sir Hubert Bond on the "Magnitude of Mental Hygiene as a Public Health Problem" was impressive; Prof. G. M. Robertson on "Psychopathic Hospitals and Clinics," illuminating; Dr. J. R. Rees spoke cleverly on the "Organization of Special Types of Clinical Services," on the "Significance of Social Relations in the Character and Personality Development of the Adolescent," and on "Special Intellectual Abilities and Disabilities"; Dr. Doris Odlum was interesting on "Alcohol as a Problem in Mental Hygiene"; Miss Mary Chadwick talked sympathetically on "The Teaching of Psychiatry in Medical, Nursing and Social Work and other Professional Schools," "Mental Hygiene Problems of the Grade Schools," and "Treatment of Special Problems in the Pre-School Period"; Dr. W. Moodie with authority on "Child Guidance Clinics," "School-Home Relationships in Child Development," and "Treatment of Special Problems in the Pre-School Period;" Miss Evelyn Fox on "Public Education in Mental Hygiene" was concise and convincing.

These were the special opinions of their performances I gathered from conversation with members generally.

It was impossible for me to hear all these papers, but I was present when Dr. Doris Odlum and Miss Evelyn Fox spoke.

"Housing" and Alcoholism.

Dr. Doris Odlum put the view-point that shortage of housing, by driving men to public-houses for rest and recreation, led to much more drinking than if home surroundings had been adequate. This seemed a new point of view for those present, and created much interest.

Public Education in Mental Hygiene.

Miss Evelyn Fox's address, distinguished for conciseness, met with cordial approval. She declaimed against needless multiplicity of the types of social worker, and spoke of the need of making full use of present organizations before creating others.

Everybody will agree with Miss Fox's view, so long as the generally trained and experienced social worker receives in addition special training for the particular work she is required to do. In this respect I instanced special after-care work, environmental work in respect of cases entering mental institutions, child guidance and mental deficiency work.

Now, of the forty-five major topics discussed, in addition to those I have already commented upon, there are two or three others of great importance, which I think fall within the scope of this paper, and to which I feel I ought to give some attention.

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Psychiatry and Public Assistance.

I have, both here and elsewhere, emphasized the importance of public assistance being guided by psychological insight—what I have called "the psychiatrization of public assistance." I was therefore glad to hear that "Mental Hygiene Problems of Dependency" was to be one of the topics selected for discussion. I hope this selection alone will lead to greater attention being given to what I have already advocated in this direction.

A paper entitled "The Mental Hygiene of Economic Dependency" by Grace F. Marcus was a remarkable exposition of an aspect of a subject of much promise about which so little is known. That acquired or innate mental inefficiency is at the root of most cases needing public assistance in the form of relief, and that such relief is either useless, or, what is still more important, does harm, unless at the same time steps are taken to deal with the basic factor just mentioned. This is only commonsense and needs no psychologist to apprize. But just as there are both theoretical and practical aspects of "economic dependency" so likewise are there theoretical and practical aspects of public assistance and about which we know very little. Even a superficial study of them will support my plea that a psychiatric outlook is absolutely necessary in the proper carrying out of public assistance by local authorities. Let us examine a few points in this (shall I say?) new branch of psychiatry. The paper to which I have drawn attention will help us.

Now, the deliberate use of money (or equivalents in kind) as a method of treating mental inefficiency is a novel proposition, and must be distinguished from that form of charity to which public assistance, unreformed, amounts. The first inquiry we must make is, "What part does money play in life?" Obviously an important one, for society demands that the family shall maintain itself, and only exempts it from this economic obligation under very special circumstances. Otherwise failure in this duty is looked upon by society rather as a punishment.

Money is the means (1) by which the individual maintains physical existence—it is obtained by labour and exchanged for material goods. (2) It is the fortification against want, dependency, and neglect during illness and incapacity. (3) It makes possible education, vocation, culture and recreation. (4) Possession of it makes the world appear to reflect affection and approval, it gives us a sense of personal authority over others. (5) Loss of it, on

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the other hand, makes the world appear to reflect hostility and condemnation, engenders feelings of impotence and of enslavement to the domination of others. Money is the one immediate impressive measure of individual adequacy, family prestige and social position. The value of money in fantasy is unlimited.

All these statements about money, if carefully examined, are found to be emotional values, and the great point about this is that they are unconscious and only shown in his attitude and conduct —things we can observe objectively. Such psychological considerations are important, because the success of public assistance must be judged by the degree of restoration to economic functioning. Public assistance may provide for physical needs (which is the layman's only view-point), but whatever effect this has in the abatement of these emotional conflicts as shown by observed behaviour, its permanency remains doubtful until there is re-established a personal integrity, which expresses itself in maximum self-direction and self-reliance.

Thus the uses and effects of public assistance must, in each case, be analysed, and possible sources of character deterioration attributable to the reception of material relief must be eliminated. It calls for good case-work directed by psychological insight being available to public assistance committees and agents. Relief given without it may be employed not for practical needs, but to supply unconscious desires and emotional values appertaining to the loss of money and all that may mean. Everybody was appalled not long ago by the amount of character deterioration in the recipients of Poor Law relief. The subsequent gathering armies of unemployables or dependents had one result. Relief was curtailed and the needy left to an obscure fate. It amounted to a relinquishing of public assistance for merely economic reasons. Such a condition of affairs should not be possible or necessary with the help trained psychiatric social workers can give.

My last words on this subject, the fringes of which I have only touched, is to ask you to give the new branch of social psychology and its psychiatric implications a chance to develop, for I am convinced much good can come of it. I wish also to confirm in your minds the cardinal fact that public assistance will inevitably go to satisfying those unconscious forces which condition the individual's emotional reactions to money and, if these are not in accordance with his real needs and are allowed to operate undiscovered and unchecked by trained supervisors and without psychiatric aid, no possible good in the long run can come of public assistance, and there

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will be no solution of the social problem of economic dependence. Chronic pauperdom will thus remain as before, and one hope of the new Local Government Act will not materialize.

Mental Hygiene in Schools, Colleges and Universities.

Another topic to which I desire specially to draw attention has to do with education, or more accurately with the mental health of students and teachers, namely, "College Mental Hygiene," on which subject Dr. Arthur H. Ruggles submitted a thoughtful paper. I draw attention to it because in regard to some of our Universities the relationship between them and City authorities in this country is a close one.

Although, to quote Dr. William A. White, "childhood is the golden age for mental hygiene," is a postulate which few would care to dispute, yet how slow the world has been to make use of its practical value! Had the same authority said "Childhood is the golden age for physical hygiene" we in England would say, "Of course it is. Look at our magnificent school medical service; can it be matched anywhere?" But splendid as that is, can we say that the health of the child's mind is tended as meticulously as the health of his body? Searching for mental defects, testing for mental abilities and other practical psychological work of a like nature in school-children one hears a good deal about in the reports of large educational authorities, but has not the day yet to come when it can be said that every child attending school has all the aid child psychiatry can give it? Experience in America is overwhelming that this aid is needed in non-defective children. Of the "problem" children of fifteen years and over psychiatrically examined in high schools, the heredity was good in 82% and the home environment satisfactory in 72% of cases.

Failing as we do to pay more than a superficial attention to the mental difficulties of normally-minded children we are utterly oblivious to the mental needs of adolescence. I am aware that there is a good deal of positive mental hygiene in the training of Boy Scouts and Girl Guides, in the sports and cadet training in our colleges and universities, but is not this good work chiefly in the moral sphere?

But here I want to draw attention to a fairly recent mental hygiene activity which I think, with Dr. Ruggles, is distinctly an American idea; I refer to the introduction of the psychiatrist as an integral part of a university organization. Nearly twenty

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such appointments have been made either on a whole or on a part time basis. Lectures on mental hygiene are now being given and consultation services established, and excellent reports as to their value are universal. The advance has been made with such rapidity that, as Dr. C. Mildred Thompson says, "it is no longer progressive to have an expert in mental hygiene on the staff and to give as respectable a place in the curriculum to mental as to physical hygiene. It is reactionary *not* to do these things." Experience in America shows that there is plenty of work for the psychiatrist. In American Colleges 10% of the students voluntarily consult the psychiatrist. The mental hygiene of the freshman is the most useful field, his abilities and capabilities, peculiarities, his emotional control and the danger-points of his personality. The course of studies mapped out, even the profession chosen may be entirely altered on the report of the psychiatrist. In the lectures it is every-day difficult problems in mental life, such as we all have to meet, which are discussed, and care is taken not to lead students to be morbidly interested in themselves. Thus all reference to mental diseases is avoided. As Dr. C. M. Hincks says "The general aim is to assist students to know themselves, to accept themselves and to be themselves." Students acquire a useful knowledge of the ways in which the mind works, of healthy ways of adapting themselves to their environment so as to get the best values out of life.

Some recent behaviour occurrences in our Universities point strongly to the need there for an active mental hygiene programme. Apart from such sensational happenings, if one only reflects on what college or university means to the students—on the ordeals of constantly occurring competitive examinations, on the intense study in preparation for them, on the fears and anxieties as to the results; on the occurrence of mental fatigue, insomnia, mental depression or excitement or bizarre behaviour—one cannot fail to realize that there is here a rich field for the psychiatrist. The student's reaction to what his mind takes in for the first time may not be all that could be desired. Emotional conflicts, strange notions, ill-digested conclusions may have a damaging effect, and be contrary to sound character development and normal social trends. These and errors in the selection of vocations may account for there being so many with university degrees who have little or no productive or wage-earning capacity. Much of this waste of youth could be avoided if the services of psychologists and psychiatrists, specially trained for college and university work, were

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available. As a beginning I strongly suggest that the British Universities should combine to send a mission of inquiry to America to see for themselves what fine mental hygiene work of this kind is being done there.

Finally, as regards mental hygiene and education, America is seeing to it that the moulding of its future citizen through pre-school, school, high school, college, and university ages shall not suffer from lack of the aid that psychiatry can render. Could we be persuaded to do likewise I feel sure we should bring to an end much economic waste in manhood and wealth.

"Psychopathic Hospitals," "Clinics," etc., defined.

In this country some advocate "clinics," some "psychopathic hospitals" and some "mental out-patient departments." Others speak of "observation wards." Dr. Petrie has described in his paper several of the famous psychopathic hospitals and clinics of America.

What do all these terms mean? Do they represent different forms of psychiatric activities? The question is not easily answered: "psychopathic hospital" is distinctively American; "clinic" continental; and "out-patient department" British. There seems to be one prominent common factor underlying them, *i.e.*, the early treatment of mental disorders.

Now clinic means a place where students attend for lectures and instruction in the examination and treatment of patients, especially at the bed-side. Patients attend or are admitted for treatment. Teaching should always be associated with the word "clinic"; so an out-patient department which teaches is virtually a clinic—so is a psychopathic hospital if students attend.

"Psychopathy" is plainly "any disease of the mind," including insanity. In practice, however, it has come to refer to mental cases which are either not certifiable under Lunacy Acts or should not be so certified, *i.e.*, undefined cases, mild, acute, curable, or incipient cases of mental disorder. "Psychopathic" is a term which should not now be applied to hospitals receiving only certified cases.

Of the terms "hospital" or "clinic"—which is correct? I fear that neglect to make any distinction is common. If teaching is not obtainable or is only a secondary function, then I suggest that "hospital" is the proper word.

The words "psychiatric" and "psychopathic," are in common use. The former may best be regarded as appertaining essentially

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to the " art " of mind-healing, the latter to the " science " of mind disease. A psychiatric hospital need not concentrate on research, but a psychopathic hospital should make definite provision for research. The term " psychopathic hospital " was first used by Pliny Earle, in 1867, as applicable to a State or municipal or voluntary hospital for early treatment of mental disorder. It may or may not be also a university clinic.

Dr. Petrie has also described the " observation " or " reception ward " for mental cases of some of the municipal and general hospitals in America. Several of these are so well found in research, diagnosis and treatment as to deserve the name of " psychopathic wards." Such are the Psychopathic Wards of Bellevue Hospital, New York, and of the County Hospitals of Cook County, Illinois and of Los Angeles.

I have thought all this important, as local authorities in many districts have now to provide accommodation for early treatment of mental disorder.

The Parallel Evolution of Psychiatry in America and England.

I ought to remind you that the lines on which British and American facilities for the treatment of mental patients have developed in the past have been surprisingly similar, though not exactly parallel in time. If we admit this solidarity of the progress of psychiatry in English-speaking countries we may hope that it will continue in the future.

In the United States of America the present Lunacy Laws and State Care of the mentally afflicted are the result of the philanthropic work of Dorothea Lynde Dix in the last century, and of vindictive ex-patients like Mrs. Packard, of Illinois (who advocated obligatory jury-trials before admission to mental institutions) in the sixties.* [Comparable to Lord Shaftesbury and his legal opponents.]

There was local care at the cheapest rates for the poor insane. Any accommodation was good enough, and only a few hospitals like the Pennsylvania, Butler's, Hartford and McLean existed. [Comparable with Bethlem, St. Luke's, the mental wards at Guy's Hospital, etc.] The pressing needs of the mentally afflicted demanded State assistance, and State and County hospitals were organized. [Comparable with early lunacy legislation making the provision of public mental hospitals compulsory on local authorities.]

Local and private developments ceased and admission wards to municipal institutions remained much the same. [Comparable with the cessation of the

* *"A notable instance of successfully planned pernicious legislation is the so-called 'Personal Liberty Law' of Illinois. It is sometimes called also the 'Packard Law' after Mrs. Packard, a former patient in one of the State asylums of this city. This law was enacted in* 1867, *and provides for a trial of the fact of lunacy before a jury, which fact must be found before a patient can be admitted for medical treatment in the asylums of that State. This law has now been in operation twenty-two years."—Abstract from an address by John B. Chapin, M.D., June* 18, 1889.

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founding of registered hospitals and the reign of the ill-found observation wards of workhouses.]

As far as the treatment of patients was concerned, there was scant individual medical care, but an abundance of interest displayed in classification and futile statistics. [Surely not untrue in the past in Great Britain!]

Modern advance commenced with interest in *post-mortems*, morbid anatomy and pathology. [Applies equally to both countries.]

Establishment of the Central Pathological Institute, New York. [Compare with establishment of the Central Laboratory of the London County Mental Hospitals (Mott) and the Scottish Asylums Laboratories (Ford-Robertson).]

Development of admission buildings and psychopathic wards in municipal and State hospitals. [Admission wards improved in Poor-Law institutions in Great Britain, and acute hospitals added to English mental hospitals over thirty-five years ago.]

Psychiatric pavilion to Albany General Hospital in 1902. [Out-patients and some beds at St. Thomas's, Middlesex and other general hospitals in London.]

First state psychopathic hospital established at Ann Arbor, Michigan, in 1906; Boston Psychopathic Hospital founded in 1912; Phipps Psychiatric Clinic in 1913. [Projection of the Maudsley Hospital about this time, but separate hospital units for mental cases had been envisaged by the London County Council since 1889. Phipps and Maudsley Bequests are comparable.]

First psychiatric social worker appointed in America was Miss Elizabeth Horton, at the Manhattan State Hospital in 1906. [Appointment in 1922 at Horton Mental Hospital of Miss V. M. Dale.]

"After-Care" was organized for the first time in Maryland under a full-time psychiatrist in 1911. Psychiatric courses in Clark's University, Massachusetts, in the nineties. [Dr. Conolly's course of lectures at Hanwell in 1842.]*

Mental Hygiene and Industry.

A word as to "mental hygiene and industry"—a subject keenly discussed at the Congress. It was pointed out by Dr. Haven Emerson that 1,000 employees showed 100 disabilities each quarter, and Dr. V. V. Anderson,† who had been doing specialist work on these cases, reported that 25% of them were psycho-neurotics. He classified them as (1) chronic hospital users; (2) compensation and sick-leave cases; (3) situation reaction cases; (4) fatigue cases; and (5) cases of nervous and mental disease in early stages.

Child Guidance.

American sense of the importance of child psychology to individuals and to the community dates from about 1890, and a society for its study was formed in Illinois in 1894. The work of Stanley Hall, Meyer, Goddard, Huey, Krohn and Witmes laid the foundation of Child Guidance. Its growth has been the most remarkable feature of the mental hygiene movement in America. Ten years ago the number of psychiatric clinics for children was 65; it is

* *American facts taken largely from the "Organization of Community Facilities for Prevention, Care and Treatment of Nervous and Mental Diseases," submitted by Dr. Adolf Meyer to the Congress, May 6, Session A.)*

† *Congress paper "The Contribution of Mental Hygiene to Industry."*

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now 600, and the States actively interested number 31. If the number of habit clinics for children, for which Prof. Thom has done so much, is included, over 980 clinics are devoted in America to child behaviour problems.

In children's clinics proper more than 40,000 children are treated annually. The number of "clinic-hours" in 100 selected clinics has risen since 1922 from 200 to 1,200 per week.

To think that America is not placing great reliance on child guidance as a measure of prophylaxis would, in face of these facts, be ridiculous.

Mental Hygiene and Delinquency.

The "probation system" and similar methods of dealing with adult prisoners in the States of America have not been developed, with some remarkable exceptions, to the same extent as in England. Briggs' Law in Massachusetts and similar legal provisions on the Continent for the remand of prisoners (suspected of mental unsoundness) to psychopathic hospitals and clinics for observation and report have much to recommend them. The examination, of such cases in prison does not seem to be the proper method, for the case may be one of pure mental disorder. The aid of expert criminologists could just as well be given in a psychopathic hospital or clinic as in prison.

There has been a remarkable development of juvenile courts in 15 of the 48 States of America, due to the pioneer work of Dr. B. Glueck in New York and by Dr. William Healy in Chicago, since 1909. America has now some 65 juvenile courts. A recent important factor has been the establishment of child delinquency clinics under the Commonwealth Fund, largely due to the influence of Mr. Barry C. Smith.

Occupational Therapy.

I was rather surprised that the old and familiar employment of mental patients and the teaching of trades in Great Britain since 1840 was being confused with strictly clinical occupational therapy, devised in America about 1910. It is very important that an effort should be made in this country to keep these two activities separate if the clinical form is to be successful. The industrial form is mainly economic, the other strictly medical. In combination, the latter would undoubtedly succumb to the former.

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Clinical Records.

The clinical notes and patients' dossiers at one State hospital I found were neatly typewritten. Information for research purposes is much facilitated thereby. I was told the system was universal in America, and that a specially trained lay staff was employed for the purpose. It aroused in me a feeling of envy when I thought of the labours spent in deciphering the vagaries of our medical officers' handwriting and the hindrance given to research work thereby. I commend reform on these lines to the earnest consideration of my listeners.

The Magnitude of the Problem in America and England Compared.

In 1929 * the total number of known insane in American institutions of all kinds was 338,251, in England 122,635, or 277·7 and 290 per 100,000 of the general population respectively.

The total number admitted in the same year was: America, 117,049 patients; England, 23,952.

The rate per 100,000 of general population for first admissions was: America, 76·0; England, 45·4.

Discharged in that year: America, 66,952; England, 14,516.

Died in that year: America, 33,077; England, 8,867, or 7·55% and 6% respectively, calculation on the number under treatment.†

In America there are 900,000 feeble-minded persons, or 8 per 1000 of the general population. This is the same ratio as Dr. E. O. Lewis found in regard to England for 1926, though others would rather put it at 6 per 1000.

The rate per 100,000 of the general population in institutions for the feeble-minded was: America, 50·6; England, 61·8.

The epileptic rate on the same basis was: America, 8·1; England, 5·3.‡

* *In the United States of America, according to the census of* 1880, *there were* 91,997 *insane persons,* 41,101 *being at home,* 417 *in jails,* 9,302 *in almshouses having insane departments,* 40,942 *in hospitals for the insane, and* 235 *in other institutions. There were* 139 *institutions for the insane,* 60 *being State hospitals. In* 1929 *there were* 564 *institutions for the Insane* 254 *being State hospitals.*

† *The "total number under treatment" in Federal statistics means "the equivalent number of patients under treatment during an entire year." This figure is calculated in the following way: P = number of patients at the beginning of the year, A = half the admissions during the year (transfers excluded), D = half of the discharges during the year. If T is the number sought, then T = P + A — D.*

‡ *Statistics are taken from the Report of the Board of Control for* 1929, *a Congress paper by Dr. Frederick W. Brown, Director of Information and Statistics of the National Committee for Mental Hygiene on "A Statistical Survey of Patients in Hospitals for Mental Disease and Institutions for Feeble-Minded and Epileptic in Thirty-Two Countries," and a Congress paper by Dr. Haven Emerson, Professor of Public Health Administration, College of Physicians and Surgeons, New York City. A Federal State publication, "Mental Patients in State Hospitals,* 1926 *and* 1927," *published in* 1930, *has also been used.*

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I learned of other serious aspects of the mental hygiene problem in America, chiefly from an illuminating paper by Dr. Haven Emerson.

During the past seventy years, the suicide rate in America has risen from 4·9 to 19·7 for each 100,000 of the population. The English figure for suicide in 1928 was 4890 or 12·5 per 100,000 of the population.

In a medium-sized industrial city of New England, a recent survey of unselected normal children of 4 years of age, with standard intelligence tests of from 75–150, 36% were found to have characteristic behaviour problems likely to give personal and family trouble later. Half a million children at school in America show minor speech defects, such as stammering and stuttering, and 1% show major speech defects.

Two other surveys are disquieting. Among 1,167 public school-children in Rhode Island, 8·6% were found to be mentally defective, 2·1% psychopathic or psycho-neurotic, 23% dullards, and 13·5% were border-line cases. Similar figures for Staten Island, New York, were: 3·6% feeble-minded, 16·8% dullards, and 9·2% border-line cases. Continuation-school children in the same area showed: 16·7% feeble-minded, 28% dullards, and 25·9% border-line cases. In Massachusetts during 1921–22–23, 3,553 elementary school-children of 3 years of age and upwards out of 154,382 attending school were referred to mental clinics. Of these 72% were feeble-minded; and —(*note*)—in 89% of them the cause was other than heredity, organic brain disease or epilepsy—a hopeful fact. Only 26% were free from physical defects, and 67% needed immediate medical or dental treatment.

In various States of America in 1928, 38,882 children passed through 64 courts devoted to problems of delinquency in children, and there is good reason to suppose that 1% of the public school child population is delinquent.

How America is Coping with the Problem.

How America is dealing with this problem can be gathered from the central facts which I have just related. Has America any message for Great Britain helpful to meet an almost identical problem? Does America realize the seriousness of her problem and do we realize the seriousness of ours? Without this realization nothing can be done. Comparing the two countries, the one thing that greatly impressed me during my visit was the depth and breadth and sincerity of America's mental hygiene movement. America for the most part has not only realized the nature and gravity of the problem, but America has made up her mind as to how best it should be met. America has realized that she cannot escape from but must face the question. Haven Emerson says, "Man can redeem his fellows. Human society is as ruthless as the law of the jungle, and it can be as relentless in sweeping away obstructions to its own progress as in overcoming hindrances to its pleasures."

America's Mental Hygiene Messages.

America has a Mental Hygiene message for us—in fact many. One thing is certain, and it is that America intends to attempt the solution of its psychiatric problems, not along the now archaic line of "bricks and mortar," or by treating end-products only, but by

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child guidance and social welfare work of all kinds, organized for the prevention and early treatment of mental disorders; eugenic measures and parental education. These and such curative educational and directing agencies as psychiatric out-patient departments, psychopathic hospitals, wards and clinics, etc., are to have the drive of America's dollars for the future.

As evidence of this is the recent return, already mentioned, of psychiatric clinics for children in America, which shows the number to have increased during the past ten years from 65 to 600, or including habit clinics, 980. Mental hygiene has begun to invade the home, the school, industrial and university life. The sources of mental defect, inefficiency and disorder are being located and stemmed, and no longer allowed to exert unchecked their harmful influence on human character. Though physical infections and abuse of the central and nervous system must be met in the early stages by appropriate institutional care and treatment, humanity by personal contact with humanity, must protect, console and succour humanity in its dire necessity.

As to institutional care and treatment in America, the direct State control of mental institutions has been spoken of favourably in this country. True there are visiting committees to the State hospitals appointed from the locality, with nominally advisory duties. In reality they are by no means negligible. Comparison is between the State control in America and the Board of Control plus local authority control in England. The great difference lies in the source of the appropriations or grants for the public mental services. There is really not much difference between the powers of the State Government of New York and of the London County Council, except that the former can legislate, and is largely free from the interference of the Federal Government. Some of the States in America have only one State hospital, and many have two or three. In these the handling of mental hygiene problems by the State or by local bodies cannot really make much difference. State finance is largely controlled politically; local finance is not (or should not be). I cannot help thinking that the terrible overcrowding of American State hospitals, in some cases to the extent of 50%, would not happen if the provision of accommodation lay with local authorities.

Centralized State departments exist in Massachusetts, New York, Pennsylvania and Maryland; special boards, such as "State Hospital Commissions," in Michigan, Nevada, New Hampshire and Utah. In thirty other States all public institutions are under a single board or department called the State Board of Control.

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I have always laid it down that the more closely local people are identified with the care and treatment of their mentally afflicted and defective cases, the sooner will ignorance and prejudice regarding them be dispersed, and the better the provisions made for them, and the smaller the need for State control and for judicial intervention in the practice of psychiatry. It is for the State to enact great principles and advise how they should be carried out, reserving to itself a veto when such principles are disregarded.

One must admit that with smaller local authorities economic considerations are often strong, and the outlook may be much more narrow than that of State bodies. This was stressed by Dr. Meyer at the Congress. The only way to combat it is by that education and experience which comes from the actual control of the situation. The failure of the State bodies to prevent overcrowding in State hospitals is chiefly in regard to chronic patients, and is largely from reluctance to perpetuate an uneconomical situation. They look for better results in the more promising methods I have emphasized in this paper.

The State hospitals in America do the great bulk of the psychiatric work in providing 90% of the institutional care. It is therefore a question, not of abolition, but of making the best possible use of them. They form 52% of the total hospital accommodation of America and special hospitals (psychopathic, etc.) only 12%. The tendency is to provide special services—prophylactic, social, after-care, etc.—in order that they may do work similar to that of the psychopathic hospital, but their scope in this direction will always be limited. Progress along these lines in the State hospitals has not been uniform, and much remains to be done. Some State hospitals are so overcrowded and undermanned that treatment of recent cases is inadequate. Of one hospital it is reported that 60% of the patients admitted during the year had to be transferred from the admission unit to chronic wards before either the physical or the mental examination had been completed (Russell).

Here, again, may there not be an extraordinary resemblance between the psychiatric situation in England and America?

As regards the future provisions in America, prophylaxis and early treatment will more and more dominate the situation. The nature of the provision will depend upon local needs, historic development, private benevolence, and the presence of a medical school. Undoubtedly private or State psychopathic hospitals and clinics, as separate units or units attached to general hospitals as the case may be, will find favour in many States. Others

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may compromise in developing adequate provision in the present State hospitals. The fact that private mental hospitals doubled in number from 1910 to 1923 is significant of the trend in America.

The following words of Macfie Campbell are worthy of earnest consideration in this respect:

> "The special *rôle* of a psychopathic hospital, its close affiliation with the general hospital, the absence of the large accumulation of chronic patients, makes it easier for a patient to accept the suggestion of admission to a psychopathic hospital than to that of admission to a large hospital for mental disorders. To send the patient to a large State hospital at an early stage of a mental disorder often seems to the family a rather drastic step. The family accepts more readily admission to a psychopathic hospital; should the patient have to go later to a State hospital for continued treatment, the relatives feel that the step has been taken after due consideration and a thorough diagnosis."

Southard, the organizer of the Boston Psychopathic Hospital (first brought into being through the efforts of Dr. L. Vernon Briggs) as an independent State Hospital in 1912, writing in 1919, said:

> "I believe, then, that this extraordinary accessibility of the psychopathic hospital which has now taken in over 12,000 cases in its brief history is the point to emphasize with respect to the Boston institution. We have tried to make and have succeeded in making the psychopathic hospital a highly permeable membrane between general practice and the State hospital system. It is perhaps not yet fashionable to be psychopathic, but at all events the State hospital system is no longer a forbidding one to the friends of the psychopath, and even to some of the psychopaths themselves."*

If these view-points are to apply to psychopathic hospitals in this country, we must be careful not to limit unnecessarily the type of case admitted.

America has also lessons for us in the importance it attaches to the psychiatric education of medical men, social workers, occupational therapists, and others in the field of public welfare.

Research work, too, is more widely developed, and receives greater support and encouragement both from the State and private citizens than in this country.

Regarding judicial intervention in the practice of psychiatry and the legal attitude to mental patients America has really little to teach us (if the Mental Treatment Bill becomes law), except, perhaps, in the way patients are allowed out on leave or discharged.

* *Canadian Journ. of Mental Hygiene*, April, 1919.

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Although most State hospitals can admit voluntary patients, such admissions do not receive much encouragement from the hospital authorities, judging by conversations I had with superintendents from all over the States. Moreover the state of mind prescribed seems to almost exclude aberration. The overcrowding in the State hospitals, too, was discouraging.

Volumes have been written in this country about provision for voluntary admissions. It is not easy to find reference to it in American literature—certainly I heard no perfervid utterances on the subject during my visit. Macfie Campbell, at the Congress, said it was important that there should be a simple procedure for obtaining authority for the admission of a patient to a psychopathic hospital when, owing to mental disorder, he was not competent to give consent. The absence of such provision might seriously limit the usefulness of the hospital. Meyer said that the State limited itself to providing hospital accommodation for "certified" cases. In some States a Court order was needed; in others the commitment was merely a statement by two non-related physicians that the patient was insane and required hospital care. This gave sanction to detain the patient, who has the right to request a sheriff's jury or a judge to decide on the question of his sanity and detention. Unless an "order" was obtained the friends could remove the patient. Some States had temporary commitments for from five to thirty days' detention. He was of opinion that if compulsory detention was proposed, the patient should have the right of appeal as above.

However, from my inquiries I found that the common practice was admission on two medical certificates attested by a judge who, upon the evidence, might commit the patient to a mental institution or temporarily for a period of days pending the determination of the patient's insanity, but on two such attested certificates only a patient could, in an emergency, be admitted and detained without an order of commitment, but only for periods varying from five to thirty days, if a "hearing" was demanded by the patient or his friends. Then the case was "heard" by the judge, who issued a "commitment order," or directed the patient to be set at liberty.

Some such admission procedure is thought, in many State hospitals, to be the wisest course even in non-litigious and voluntary cases, in order to avoid future legal complications.

There seems to be nothing new in this procedure, for on reference to the "Propositions and Resolutions" of the Association of Medical Superintendents of American Institutions for the Insane dated

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October, 1868, Resolution I of the section "Legal Relations of the Insane" reads:

> "Insane persons may be placed in a hospital for the insane by their legal guardians, or by their relatives or friends in case they have no guardians; but never without the certificate of one or more reputable physicians, after a personal examination made within one week of the date thereof; and this certificate to be only acknowledged before some magistrate or judicial officer who shall certify to the genuineness of the signature, and to the respectability of the signer."
>
> A further Resolution No. 10 applies the same form of certificate to paupers.
>
> Other resolutions deal with the commitment by a Judge or a Court, still practised, with slight variations, in many States, and I should think is mainly applicable in dangerous or protesting cases. It is only a transfer of function to give this power to a State lunacy official, which I understand has been done in one progressive State.

In indigent cases a health officer or some other competent person can authorize the detention of a patient in a suitable place pending formal commitment to a State or "some proper" institution. The "attested" form of medical certification seemed to be fairly general in all admissions, whether committed cases or not.

Objectionable forms of judicial intervention still exist, but America does not seem to care very much. A period of treatment for twelve months without any judicial intervention, as proposed under our Mental Treatment Bill, is, generally speaking, in America unthinkable by both medical and legal authorities. The stigma of lunacy, strong in England, hardly exists in America. It was reported to the Congress that in only three States was the attitude of the public to the mentally afflicted one of mistrust and prejudice. Both medical and legal opinion seems to be that unless the patient signifies his willingness to remain for mental treatment, then a judge's or Court order must be obtained. I do not think American opinion on this matter will change, and why should it under the circumstances?

It is the hospital in America comparable to our registered hospital which receives the majority of voluntary admissions. I hope that our experience under the Mental Treatment Act will not, as regards voluntary admission to public hospitals, be the same as in America. I feel sure it will not if Sections 1–5 are properly administered by the local authorities.

Special Committees were at work during the Congress studying the findings of the World's Mental Hygiene Survey in progress for the past twelve months. The following abstract from the report of the Committee on Legal Measures and Laws, which was approved by acclamation at the last meeting of the Congress, is germane to this subject of admission and detention:

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> "Admission to a mental hospital for treatment should be as informal and easy as the constitution and laws will permit. To this end we recommend that jury trials on the issue of insanity for commitment be abolished; that the presence of the patient to be committed be not required, but be within the discretion of the judge; that the voluntary admission of patients who are seeking treatment and who are competent to make such applications be encouraged, and that those States which have not such laws be urged to adopt them. Laws should be adopted as speedily as possible for the temporary care and study without formal commitment of patients under the recommendation of a physician, and provision for the commitment of patients for a period of observation should be likewise adopted."

I have suggested that America might teach us something in the discharge of patients. I do not think the American system of patients paroled for long periods will appeal to Great Britain. Patients no longer needing institutional care are allowed out (paroled or "on visit") for periods usually up to twelve months, but without any subsistence grant. They are allowed to resume occupations and are visited by "follow-up" workers, sometimes by a medical officer, or they may report periodically to out-patient clinics. They must return to hospital whenever requested and may return on their own initiative. Such paroled patients seem to have no difficulty, as a rule, in finding employment. The latest return for discharges from all the American State hospitals was 34,662 and there were also on the books of the hospitals at the end of the year 29,849 patients on parole. I gathered that a large proportion of discharges are first paroled. The paroling of patients is usually the duty of the medical director except in serious criminal cases. A patient who does not return to hospital or is not sent for at the termination of the period of parole is considered to be discharged. Discharge without previous parole commonly requires the authorization of a higher authority. Several higher authorities can also discharge patients independently, and the friends can appeal against a patient's discharge. Both as regards commitment and discharge, practice varies very much in the different States.

Schemes for the parole of patients and supervision in their own homes have always attracted me, and there are many points in favour of this system of care and treatment of the mentally afflicted. I was told that the augmented *personnel* of the hospital required costs less than keeping the patient in hospital, but a sufficient number of patients must be paroled to ensure this. Every paroled

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patient makes room for a new patient and saves expenditure on buildings. Patients may be induced to work in home surroundings who are stubbornly idle in hospital. My experience is that parole often hastens convalescence. The success of any such system will depend upon an efficient social department, and no subsistence grant from the hospital.

The parole system of America must not be confused with "boarding-out" in the English and Scotch Lunacy Act. There are essential differences, which I cannot go into now.

There is a way, however, in which parole on the American system might be tried in regard to chronic patients in England with some likelihood of success. It is based chiefly on economic considerations. It is well known that in our mental hospitals there are many patients presenting no asocial traits except laziness and lack of interest in the future. Others, quite harmless cases, will not work and are always clamouring for their discharge. They are all grave economic losses to the community while in hospital. I feel sure many of them might be made economically independent, or partially so, if discharged to their homes, without a subsistence grant, environmental factors being suitable, and supervised there by visits from trained social workers. Many patients who escape from hospital do make good somehow. I have no hesitation in saying that working patients who are happy in hospital and who are needed there for economic reasons should not be paroled under such a system unless there are strong family reasons for so doing.

In America "discharged recovered" indicates that the patient has regained his normal mental health and has the same mental state as previous to his attack. [About 26% of total discharges.] "Improved" denotes any degree of mental gain less than recovery. [About 48%.] "Unimproved" denotes no mental gain. [About 18%.] "Without psychosis" refers to discharged patients who had no psychosis at the time of admission to hospital, even though such patients may have improved under hospital care. [About 6%.] "Unclassified" or "not reported." [About 2%.] The total number of discharges per 100 admissions. [50.]

In America in actual practice the discharging of recovered or convalescent patients is left more in the hands of the superintendent than it is in England, and thus more closely approximates to general hospitals in this matter. I suggest it would be much more in keeping with medical practice to leave at least "absence on trial" to the medical superintendent.

Under the Mental Treatment Bill it is proposed that the Board of Control should make rules applying the sections of the principal Act *re* discharge to the discharge of patients admitted under the Bill. I hope something will be done to obviate or modify the

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parading of patients before a Committee of Visitors, who can only act quasi-judicially. I am not suggesting that the members of Visiting Committees do not do this work kindly and considerately; in fact my experience is that they do. It is a matter of principle and of what is best for the patient. I admit there are some grounds for the legal view that under the principal Act, inasmuch as a legal "order" detains the patient, and as long as it is the legal duty of the Committee of Visitors to discharge the patient it is not reasonable to expect the Committee to exercise such powers without interveiwing the patient. But these considerations surely do not apply to voluntary patients and Section V admissions.

The Committee on Legal Measures and Laws I have referred to reported on discharges as follows:

> We recommend that provision be made wherever it does not now exist for the release of patients on parole and supervision during a period of convalescence, such patients to be allowed to return to the hospital without further legal proceedings should their condition necessitate return. We recommend further that provision should be established for the discharge of recovered patients without their having to have recourse to legal proceedings.

The last sentence seems to refer to some prehistoric method of discharge. Whereabouts I do not know, but in America everything is possible. Which brings me to my concluding remarks.

I was struck by the prevalence of mechanical restraint in American State hospitals and clinics.* I was told that it took the crudest form in some of the Southern States. One should not, therefore, generalize too readily as to the advances made in the treatment of mental cases in America, or set up the standard of the Eastern States as one applying to all American psychiatric institutions. I have elsewhere compared the States in America to Europe as a whole, and it is important in this matter to bear this in mind when speaking of anything American. There is great difference in the psychiatric ideals and practice in the forty-eight States. The backwardness in some seems surprising, especially as such might be next door neighbour to a State most enterprising and progressive. I have spoken of mechanical restraint and barred

* *At the first meeting of the Association of Medical Superintendents of American Institutions for the Insane in October, 1844, it was resolved "That it is the unanimous sense of this Convention that the attempt to abandon entirely the use of all means of personal restraint is not sanctioned by the true interests of the insane."*

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windows, not in a carping spirit, but merely to show that practical needs rather than sentiment dominate in America.

Conclusion.

In conclusion I wish to say that I was most kindly treated and hospitably entertained during my visit to America. Very soon I forgot that I was in a foreign country. The conditions of life, both intelletual and social, seemed so like those at home. The only thing that bothered me was the currency, which I never got used to, but waiters and taxi-drivers never seemed to mind the weird coins I paid out to them. They smiled all the same and invariably asked me something about England and the English, especially London town.

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THE CLINICAL DIAGNOSIS OF CONGENITAL SYPHILIS.

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Late congenital syphilis, with which this *précis* is concerned, is not always easy to recognize, as unquestionably the disease has altered in severity during the last few decades, and it is now rather exceptional to find cases which exhibit all the cardinal signs. In the following account, which is based on the examination of nearly 200 cases in the Leavesden Mental Hospital, the clinical manifestations have as far as possible been grouped under the various systems of the body and it has been thought advisable to include, not only the classical and unequivocal stigmata, but also those which, though not exactly specific, are yet of sufficient importance to evoke a suspicion of syphilis. Their relative frequency is shown in the accompanying table.

It is customary to divide the manifestations of congenital syphilis into three groups :

(1) Early, beginning between birth and the second year.
(2) Intermediate, between the second and sixth years, and
(3) Late, occurring during or after the period of second dentition.

Groups (1) and (2) are of chief interest to the pædiatrist ; the third group, the so-called syphilis tarda, deserves close attention, since the majority of cases in institutions for mental defectives belong to this division.

Syphilis Tarda.

General Symptoms.

The subjects of congenital syphilis are usually stunted in growth and of poor physique, although some are of the athletic type (Kretschmer). The majority of congenital syphilitics die of secondary infections, including tuberculosis; syphilis is the bed on which tuberculosis is often born.

Anæmia is not uncommon, and in the absence of signs of other disease, a sudden and rapid fall in the hæmoglobin index should

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always suggest congenital syphilis. The anæmia of syphilis may in a few weeks become profound, and the response to treatment is equally rapid.

Integumentary System.

In the early months of life, when the syphilitic rash appears, the skin is invaded by countless numbers of spirochætes, and it is therefore not surprising that cutaneous scarring should be a frequent finding in older subjects.

Rhagades constitute the most important cutaneous stigma and are most frequently found at the angles of the mouth, though they may exist in other situations, such as the anal region. Usually this fissuring is confined to the muco-cutaneous junction, but in some cases deep linear scars may be found extending out in spoke-like fashion on to the cheeks. Of more doubtful significance are the small white cicatrices rather generally distributed over the body. These indicate the site of previous spirochætal nests, but the viruses of variola and varicella may give rise to almost identical appearances.

Phagedænic ulceration with sloughing of the skin and mucous membranes may be responsible for extensive scarring, which has to be distinguished from that of lupus.

Mixed infections with tuberculosis—the so-called syphilides—may also occur, the face or anterior aspect of the limbs being the usual sites.

Occasionally the congenital syphilitic presents a fissured or "scrotal" tongue, which bears a very close resemblance to that of the Mongol.

Scarring and perforation of the palate should always be looked for in syphilitic subjects.

Dilatation of the cutaneous veins, either on the trunk or head, was described by Fournier, and I have seen several examples of this condition.

Enlargement of the submaxillary and cervical glands is said to be common in congenital syphilis, but this has not been my experience.

The Teeth.

Hutchinson was the first to draw attention to dental abnormalities in congenital syphilis, and taken alone they constitute by far the most valuable of the signs. Unfortunately the teeth of syphilitic aments are prone to early decay, so that these monuments to a pre-natal tragedy are often lost.

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The most characteristic change is that of hypoplasia, often erroneously described as atrophy, and it is essentially the upper central incisors and first molars of the second dentition which afford incontestable evidence of congenital syphilis. The *typical Hutchinsonian tooth* is dwarfed, being too short and too narrow; it is thickened antero-posteriorly so that it is unusually round on section. Its shape is that of a peg or screw-driver, so that the tooth is broader at the gum margin than at the cutting edge, and lastly, it is notched, the dentine being often exposed. Owing to their softness Hutchinsonian teeth are often ground down so that evidence of notching becomes lost in adult life. These teeth are also frequently widely spaced and tilted towards each other. It is important to note that the teeth of rickety subjects who are not syphilitic may be notched, but the notch occupies the entire cutting edge, whereas in the congenital syphilitic patient it is limited more or less to the middle third of this edge.

Hypoplasia of the First Molars.

Moon in 1878 described a deformity of the *sixth year molar* which has a significance almost equal to that of the Hutchinsonian tooth. The first molar is the only one of the permanent teeth which has its enamel laid down before birth, and when the normal enamel-coated convolutions of the crown are replaced by a rough pitted mass we have positive proof that something was interfering with fœtal growth during the last months of intra-uterine life.

In a typical form these teeth are dome-topped, and a lateral view shows that their sides slope towards the centre, and there is a definite line of demarcation where the hypoplastic crown joins the normal body of the tooth. It looks much as if a string had been tied tightly round it. The masticating surface is a flat plateau on which the rounded stunted cusps are stuck like small beads. The presence of this rough crenated surface has led to the term " mulberry molar " being applied to this condition.

The lack of enamel makes these teeth very prone to decay and they are therefore often missing in adults.

Other Abnormalities.

E. Fournier described a great many other dental abnormalities, but none of them have a diagnostic value equal to those described above. Of these the commonest are:

Erosion en cupules.—Incisors with deep pits on their anterior surfaces.

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Erosion en sillons.—Similar teeth presenting deep grooves some distance below the cutting edge.

Dents en gradins.—Incisors with grooves placed horizontally, one above the other, giving a tiered appearance to the tooth.

Atrophie cuspidienne des canines.

Dents en clou de girofle.—Small incisors with masticating surfaces resembling the larger end of a clove.

Physiognomy.

In a typical case the forehead is large, with prominent frontal eminences. Sometimes the parietal eminences are also marked, giving to the head a shape which has been compared to that of a hot cross bun. Parrot was the first to describe these nodes or bosses.

The nose is short, squat, and sunken or depressed at the bridge; the nostrils are usually tilted forwards. In some cases the bridge is not broad or saddled but the nose is still "pug"-like in appearance.

Marked deformity of the nose is seldom seen in conjunction with notched incisors—a point first noted by Hutchinson.

The complexion is usually described as being pale or earthy, but some patients have good colour.

The Eyes.

Interstitial keratitis usually makes its appearance between the eighth and fifteenth years, and while at first unilateral, invariably ends by being symmetrical. After the acute attack is over the eyes may return to normal or the cornea may remain permanently cloudy or hazy, particularly near its centre. Girls appear to be more subject to this condition than boys.

The knee-jerk is often diminished or lost in cases of keratitis.

Iritis is also seen in congenital syphilis.

Cataract of the lamellar type is sometimes seen; usually it dates from birth.

Disseminated choroiditis is by far the commonest fundus change, but may of course be due to causes other than syphilis.

Optic atrophy occurs less frequently. Abnormal pupillary reactions are, in my experience, not seen unless accompanied by other evidence of disease of the nervous system.

Bilateral dacryocystitis is said to be unduly common in congenital syphilitics.

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Osseous System.

Lesions of the bones and joints are of considerable importance, and the aphorism that syphilis simulates all other diseases is particularly true of the skeletal pathology of this disease.

Lesions of the bones may take the form of either (1) sclerosing osteo-periostitis, or (2) gummatous formation with necrosis and softening.

1. *Sclerosing osteo-periostitis.*—This variety leads to (*a*) increase in size, and (*b*) deformity of bone. In their order of frequency the bones attacked are: the tibia, radius and ulna, humerus, femur, fibula, cranial bones.

As a rule osteo-periostitis runs an acute or subacute course and it may attack several bones simultaneously. Though the new formation of osseous tissue produces deformity, it does so without altering the direction of the bone, and in this way it is distinguished from the osteitis of rickets.

The sabre-blade deformity of the tibia is due to a deposit of new bone on the anterior surface of the shaft near its middle. X-ray shows that the curving is only apparent, with the prominence most marked about the middle of the shaft.

When affected by rickets the tibia shows little new formation of tissue, but true bending is found in its lower third.

2. *Gummatous formation.*—Gummatous formation can imitate tubercular osteomyelitis very closely, and in making a differential diagnosis the Wassermann reaction should always be employed.

Usually this type ends in softening and abscess formation, and in some cases its onset seems to follow trauma. Gummata often leave permanent nodes—the tibia and cranial bones are common sites.

Dactylitis is caused by a gummatous periostitis, and manifests itself as a gradual swelling of one or more phalanges with discoloration and tenderness. The proximal phalanges are usually involved and the tendency to suppuration is slight; the toes are affected almost as frequently as the fingers. Skiagrams show a normal or sclerosed interior of the bone, whereas in tubercular dactylitis a caseous appearance usually exists.

Joints.

Syphilitic disease of the joints may take the form of an effusion or an osteo-chondritis, or both.

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1. *Hydrops.*—Bilateral painless hydrops of the knees, first described by Clutton in 1886, is often associated with interstitial keratitis, notched incisors and nodes on the tibia.

The characteristic features of this condition are (1) its insidious onset, (2) its chronic course, (3) its symmetrical distribution, (4) its freedom from pain and the mobility of the joints on passive movement, (5) its association with other syphilitic stigmata, (6) its amenability to treatment.

Apart from a markedly floating patella, X-ray examination shows very little. In some cases the elbow- and wrist-joints are similarly affected.

2. *Osteo-chondritis.*—Osteo-chondritis causes enlargements of joints. At the wrist there is often ulnar deviation of the hand, and at the elbow overgrowth of the internal condyle throws the forearm to the outer or radial side.

In these cases of what Stoll has termed " knock-knee " elbow it is possible to approximate the forearms throughout their whole extent with the elbows fully extended.

In the writer's experience osteo-chondritis affecting the elbows is a very common finding. Another effect of it is limitation of extension. Vertebral caries of syphilitic origin may simulate Pott's disease.

Graves has called attention to a scaphoid deformity of the scapula in which there is a convex curvature of the vertebral aspect. I have seen no examples of this condition, and in any case it must be difficult to recognize.

Congenital absence of the xiphoid appendix of the sternum (Queyrat's sign) is said to be peculiar to congenital syphilis, but it is a rare manifestation. I have seen only one example.

Visceral Lesions.

The liver is the commonest site for visceral lesions. Chronic enlargement of this organ and the presence of the scars of old gummata are not very uncommon. Cirrhosis is usually of the intracellular type, but the portal type also occurs, and in a few instances Banti's disease has been recorded in congenital syphilitic subjects. Waxy disease may cause enlargement of the liver and spleen.

The French regard congenital syphilis as a factor in the ætiology of chronic perivisceritis.

A good case has also been made out for the syphilitic origin of mitral stenosis in young subjects. Syphilitic endarteritis is not

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common, and when present usually selects the cerebral arteries. More rarely it attacks all the systemic arteries.

Certain cases of chronic interstitial nephritis occur in patients with positive Wassermann reactions, and girls appear to be more commonly affected than boys.

The association of congenital syphilis with paroxysmal hæmoglobinuria has been described.

Ductless Glands.

The adrenals, pituitary and testes are the endocrine glands most often structurally damaged in congenital syphilis. Addison's disease is, however, very rarely thus caused.

Syphilitic disease of the pituitary may be responsible for the development of Fröhlich's adiposo-genital dystrophy, adiposity, diabetes insipidus and infantilism. The last-named condition is fairly common in congenital syphilis and may be associated with juvenile general paralysis; it is to be correlated with the disappearance of the interstitial cells of the testes.

The thyroid is seldom attacked, and myxœdema is rarely seen in subjects with congenital syphilis.

Although the pancreas may show a diffuse syphilitic infiltration, diabetes mellitus is seldom established as a sequel.

The Nervous System.

Bilateral eighth-nerve deafness is an important stigma, and together with notched incisors and interstitial keratitis makes up the Hutchinsonian triad. It seldom develops before the age of puberty and occurs in about 5% of all cases.

The order of involvement is said to be meninges, auditory nerve, labyrinth. In a few cases the deafness is partial, but usually it is total and permanent.

Epilepsy occurs in congenital syphilis, and in a series of 190 cases at Leavesden no less than 48% were subject to fits. The fits are generally of the major variety, and cannot be differentiated clinically from those of idiopathic epilepsy.

Juvenile general paralysis occurs in about 1% of cases, and it is important to note that many cases present none of the ordinary stigmata of congenital syphilis. It differs from the adult type in that the duration is longer and remissions are practically unknown.

In my experience persistent grinding of the teeth is a symptom of some diagnostic value.

Juvenile tabes is extremely rare and, as in the adult form, may

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occur in conjunction with general paralysis. Prominent symptoms are reflex iridoplegia, ataxia of the limbs and loss of the deep reflexes; as a rule, lightning pains and visceral crises do not occur. Cerebro-spinal syphilis gives rise to a multiplicity of symptoms which can be correlated with the extensive distribution of the morbid process. The base of the brain is rarely spared, and though many of the cranial nerves may be involved, the upper extremities often escape, so that it is not unusual to have various cranial nerve palsies associated with a paraplegia of the lower extremities. This paraplegia is usually of the spastic type with exaggeration of the deep reflexes.

Other forms of paralysis which may be encountered include monoplegia, hemiplegia, diplegia and tetraplegia; of these one may say that the onset is in nearly all cases acute or subacute, and the history of their development in the early years of childhood makes possible their differentiation from those forms of infantile cerebral palsy which are congenital or are caused during the period of labour. Isolated paralysis of the cranial nerves occurs in about 10% of all cases: those innervating the ocular muscles are the most frequently involved.

Hydrocephalus may occur in congenital syphilis, and in my experience is always accompanied by pathological changes in the cerebro-spinal fluid.

The number of cerebro-spinal fluid examinations in my series is too small to permit of any conclusions, but from a study of the literature it would appear that the percentage of cases presenting positive findings varies from 14% to 30% according to the ages of the patients examined, and many patients with nervous disease of syphilitic origin have normal spinal fluids. This suggests that the nervous disease may be the end-result of a syphilitic process which has become arrested at an early age.

Congenital Malformations.

There are no congenital malformations which can be ascribed with absolute certainty to syphilitic infection *in utero*. Various authorities have assigned a syphilitic origin to the following:

Anencephaly, microcephaly, oxycephaly, achondroplasia, osteogenesis imperfecta, cleft palate, hare-lip, spina bifida, scoliosis, congenital dislocation of the hip, syndactylism, polydactylism, funnel-shaped depression of the thorax and ectopia of the pelvic organs.

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TABLE.

Summary of Physical Examination of 190 Cases of Congenital Syphilis, showing Occurrence of Certain Stigmata and Defects.

	Number of cases.	%		Number of cases.	%
Blood Wassermann positive	160	84	Typical sabre-blade tibia	4	2
,, ,, negative	30	15·7	Gummatous ulceration	6	3·1
Severe anæmia	6	3·1	Osseous nodes	4	2
Rhagades	13	6·8	Bilateral hydrops	1	·5
General cicatrices	3	1·5	Osteo-chondritis	6	3
Deep linear scars	9	4·5	Limited extension, elbows	34	17·8
Pigmented scars	8	4·2	Hyperextension, elbows	15	7·8
Syphilides	3	1·5	Abnormal carrying angles	11	5·7
Fissured tongue	7	3·6	Deformed thorax	29	15
Palatal lesions	4	2·0	,, vertebral column	21	11
Dilated veins on trunk or head	7	3·6	Absent xiphoid process	1	·5
Adenitis	21	11	Enlarged spleen	5	2·6
Hutchinsonian teeth	38	20	Cirrhosis of liver	1	·5
Moon's deformity	13	6·8	Interstitial nephritis	2	1
Erosion en cupules	5	2·6	Fröhlich's syndrome	2	1
,, en sillons	3	1·5	Infantilism (sexual)	15	7·8
,, en gradins	2	1·0	Cretinism	1	·5
Canine atrophy	11	5·7	Eighth-nerve deafness, (*a*) absolute	14	7·3
Syphilitic facies	38	20	Eighth-nerve deafness, (*b*) partial	6	3·1
Large forehead	13	6·8	Epilepsy, major	91	47·8
Natiform skull	11	5·7	,, minor	2	1
Interstitial keratitis	25	13	Involuntary movements	7	3·6
Iritis	3	1·5	Juvenile general paralysis	11	5·7
Cataract	8	4·2	,, tabes	2	1
Optic atrophy	5	2·6	Monoplegia	5	2·6
Unequal pupils	36	18·9	Hemiplegia	15	7·8
Sluggish or inactive pupils	33	17	Diplegia	20	10·5
Osteo-periostitis of tibia	8	4·2	Paraplegia	11	5·7
,, of radius	12	6	Facial paralysis	2	1
,, of ulna	20	10·5	Strabismus	30	15·7
,, of humerus	3	1·5	Muscular atrophy	7	3·6
,, of femur	5	2·6	Hydrocephalus	5	2·6
,, of fibula	3	1·5	Small cranium (20 in. or less)	44	23
,, of cranial bones	8	4·2	Congenital malformations	13	6·8

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SOME OBSERVATIONS ON THE ÆTIOLOGY OF DEMENTIA PRÆCOX.*

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It is generally admitted that hereditary predisposition plays an important part in the development of dementia præcox (or schizophrenia), and that a family history of mental illness is traceable in about 60% of cases.

Personally I am inclined to place the percentage higher still, but we all know how difficult it is to obtain any definite history in most cases. A very similar percentage is given by authorities however in the case of the manic-depressive psychosis, but, while the precursor of manic-depressive is manic-depressive, the insane ancestor of the schizophrenic may have suffered from any form of mental disorder.

Owing to its usual first appearance at puberty and adolescence Kræpelin (1) considered that dementia præcox, though often "familial," was the result of an auto-intoxication due to a disorder of metabolism, and that this was generally due to a disordered secretion of the sex-glands; and his views have received strong support from the work of Mott (2), Lewis (3), Gibbs (4) and many others, while some disagree with these authorities, notably Dunlap (5).

E. Ruden (6) considers that dementia præcox is transmitted according to Mendel's Law, and is increased by in-breeding. Myerson after an exhaustive analysis of many family groups, agrees with Rosanoff (7), Jolly (8), Krueger (9) and Luther (10), and states that "dementia præcox breeds true . . . and in an ancestor is usually followed by dementia præcox in the direct insane descendant." In other words he considers the disease a Mendelian recessive character. The writers I have mentioned further agree that the insane descendants of persons who have suffered from the involution psychoses are cases of dementia præcox, as also are often

* A paper read at a meeting of the South-Western Division, Bournemouth, April 24, 1930.

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the insane descendants of manic-depressives. As Myerson (11) puts it, " All roads seem to lead to dementia præcox, and from thence to imbecility. As the disease gets worse from generation to generation it ends in dementia præcox." Schizophrenia in an ancestor, on the contrary, does not appear to be a precursor of manic-depressive in the descendant.

Exciting factors are often apparently absent, but some cases begin after certain infectious diseases, notably influenza, and in the East, plague ; and some appear to be associated with undue worry.

In any consideration of this subject we must evaluate the relation between the structural state of the brain and its psychical phenomena—I myself and, I think, most of us hold that, however the degree of consciousness may be reduced in either congenital or acquired dementias, some defect in the brain is the cause of the trouble—this defect is generally very obscure, and may itself be due to bodily disorder or disease, expecially to disease of the endocrine glands.

Nissl, Alzheimer, Mott, and many others have demonstrated that nuclear atrophy (termed by Mott " acidophile degeneration ") is the essential morbid change in dementia præcox. This has been found most marked in the cortex, basal ganglia, and cerebellum, and very definitely also in the testis and ovary. Similar changes have been described in the thyroid, adrenals and pituitary, but these latter findings are not so well established as are those in the brain and gonads.

Mott (2) has formulated the theory that dementia præcox is the expression of an inherent lack of vitality in the fertile ovum, which manifests itself in a progressive failure of nuclear proliferation in the reproductive glands, and in a lack of durability in the cells of the cortex.

There is obviously a definite degree of parallelism between the changes in the brain and various glands and the schizophrenic reaction, and the latter is presumably dependent on the former. Even if a definite endocrinopathy were proved in all cases, it would remain for consideration whether this should be considered cause or effect of a more general deficiency. As Devine (12) puts it, " However we may interpret the findings, it would seem that there does exist a relationship between the schizophrenic reaction, and cerebral and glandular disturbances."

Then again we must consider the viewpoint of Meyer (13), that only certain personalities are liable to dementia præcox, and that these, predisposed by heredity, endocrine, or other deficiency,

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develop reactions, when called upon to face the vicissitudes of life, which result in schizophrenia.

Lately Golla (14), noting a distinct depression of the excitability of the respiratory centre to carbon dioxide in schizophrenics, and a general depression of functional nervous activity, attributes this to a disturbance of the acid-base equilibrium in such cases, which disturbance is responsible for the general degenerative changes that have been observed.

The results of his further researches will be eagerly awaited, especially as a possible line of treatment may be indicated.

Clouston (15) when discussing his "Insanity of Adolescence," refers to its marked incidence in Newhaven, and to the "notorious frequency of insanity among the old families of the Society of Friends, the most self contained and virtuous of all religious sects." This sect, I may add, is not large in numbers, and discourages marriage outside its limits.

Similarly the prevalence of dementia præcox in isolated communities has been commented on by various observers.

Whatever may be the exciting cause of dementia præcox, as a result of my experience of its peculiar prevalence among the Parsis of Bombay, I am convinced that "in-breeding" is an important cause of the disease. By this term I do not necessarily mean the occaisional mating of cousins. Since the Parsis left Persia in the eighth century, the intermarriage of cousins has been not only common but usual, the main object being "to keep the money in the family." This people constitute a small and clear cut group in the immense Indian population, and among them marriage with outsiders, and proselytism, are strongly discouraged, while their environment, from an European standpoint is, as a rule, far superior to that obtaining among other Oriental peoples.

In all India there are at present about 100,000 Parsis, of these about 90,000 live in Bombay Presidency, the remainder being scattered about the peninsula, as a rule as traders in the principal towns. Their religion is a very strict monotheistic Zoroastrianism popularly known as fire worship, and their faith inculcates sobriety and benevolence as first principles. The Parsi's chief occupation is trade, and for this his capacity is notorious.

As a class they are a law abiding and sober people. Some, of course, practice the liberal professions, or join Government service, and some remain as cultivators in Guzerat, to which province their ancestors came in the seventh century from Persia, on the conquest of their country by the Mohammedans. The number of the original

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settlers is not known, but it could not have been large, as their first settlement was on the small Island of Div off the south coast of Kathiawar, and from this island they spread to the Guzerat mainland.

At present the Parsis are probably the richest race in the East, considering their numbers. Of course there are rich and poor, but, owing to a system of mutual assistance, extreme poverty is rarely to be seen among them, and the large hospitals and similar institutions built by them in Bombay and elsewhere, bear convincing evidence of their benevolence. For instance, the Central Hospital for Mental Diseases at Poona which was for a long time in my charge, was indebted to several Parsis for extra wards and various amenities.

I have referred to their marital custom, and Sir Percy Sykes (16) records that the Zoroastrians left in Persia only numbered about 10,000 in 1923, and remarks, "Unfortunately the custom prevails of marrying cousins in order to prevent the property going out of the family. . . . The results are very bad from a physical point of view, as has been proved in many parts of the world . . . cases being common of large families intermarrying entirely with their cousins." Unfortunately there are no statistics of insanity in Persia!

The following figures show the types of mental disorder of my last 100 Parsi admissions to the Central Hospital for Mental Diseases, Poona, and of my last 50 private cases.

	Male.	Female.	Total.
Dementia præcox	48	28	76*
Manic-depressive psychosis	12	8	20†
Insanity with epilepsy	5	1	6
Dementia (secondary)	14	14	28
Paranoia	2	0	2
General paresis	3	0	3
Insanity due to ganja (*Cannabis indica*)	1	0	1
Idiots and imbeciles	9	5	14
	94	56	150

* Including all varieties.
† Including involutional melancholia, 12 cases.

In addition I would note 15 cases of the psycho-neuroses and 11 of epilepsy.

Several of the cases grouped under secondary dementia were probably originally schizophrenics, but the history was too vague for a definite diagnosis, while some under other heads showed præcox symptoms, and the small recovery-rate of 6% to admissions, though the annual average for all classes of patients was just over

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50%,* suggests that they may have been really cases of that disorder.

This singular prevalence of dementia præcox among Parsis in India is peculiarly noticeable as the disease is comparatively rare among Hindus, who constitute by far the largest section of the population, and rarer still among Mohammedans. In the last two groups I have seen the disease mainly among the more educated classes, but this has not been so in the case of the Parsis.

The publication of an article of mine in 1928 referring to this subject, elicited, among others, the criticism that the prevalence of schizophrenia among Parsis was probably due to "western education" rather than to in-breeding. I received several letters favouring this view, but in no case had the writer any knowledge of the facts. As I have stated, my patients belonged to all classes of Parsis, and the Parsi—whose main lifework is trading—rarely undergoes the intensive education, or rather memory training, which the ambitious Hindu or Mussulman undertakes to effect entrance to the Civil Service and the professions. There is no intensive western education required in the world of trade, nor do Eastern methods of trade differ widely from those of the West. I do not know why "Western Education" should be considered a possible cause of insanity in any country, especially that degree of it which assists the born trader to a more efficient exercise of his calling. I can understand that mental breakdown can be caused by the worry incidental to cramming for examinations, on which the future not only of the individual but of his family may depend. In several of my cases among Indians this has been a cause of the breakdown—as it might just as well have been if the subject of the anxious study had been Chinese polemics.

I may mention that while I had a fair number of cases of dementia præcox among the Anglo-Indian domiciled community, I had, as might be expected, comparatively few among Europeans, who come to India in some branch of Government service or in business, after strict physical examination, and as a rule over 25 years of age.

Many authorities insist that the marriage of cousins has no bad effect on descendants "if the common stock is sound." As it is very doubtful if any stock is absolutely sound, it is obvious that such marriages can only intensify in the offspring any marked taint common to both parents.

* This high percentage is partly due to the high recovery rate of ganja (Indian hemp) cases, who are, as a rule, either Hindu or Mussulman, and partly to the poor physical condition of many new admissions of the lower classes, who recover rapidly under treatment.

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It has been argued that a "taint" must have existed among the original refugees. But what taint? In the absence of evidence such contention only "begs the question." Why should it be assumed by some that "in-breeding" connot be a cause of mental disorder? The idea is, for instance, only touched upon once by Myerson (11) who writes "I scoff at the implication that because the paternal great grandfather and great grandmother were first cousins, we have any clue whatever to the gross defect in their great grandchildren, their father and mother being superior people." He would probably also scoff at the suggestion that the continuous mating of cousins, which is almost a rule among Parsis, could, irrespective of any conceivable common taint, tend to produce dementia præcox, but such a result is surely possible. If it is not the main cause among Parsis, what is the main cause?

It may be that the continuous marriage of cousins in some way lessens the power of resistance to the stresses of life, to produce the lack of vitality (to use Mott's phraseology), and the disorders of metabolism, that are the exciting factors in the break-down.

As White (17) puts it "Every individual born into the world has . . . a definite potentiality for development. The force or impetus which starts it on its path is sufficient to carry it a definite distance. In the subject of this disease the original impetus has been weak, and when its force is spent, development stops, and the retrograde process is hastened or initiated by some special physical or mental stress occurring at the critical point of puberty and adolescent evolution."

Dementia præcox appears to be the link between the entities "mental deficiency" and "mental disease" which have been artificially separated, for legislative and sociological convenience.

Tredgold (18) concludes that feeble-mindedness results from a vitiated germinal vitality which prevents normal development. Most authorities are, as Myerson writes, "firmly convinced that there is a familial transference of certain types of feeble-mindedness, and there is very distinctly appearing the belief that these familial cases originate in injury to the germ-plasm." What is this injury?

Is it not possible, for instance, that similar germ-plasms or organisms of like unit character, may be in some way mutually injurious?

Of course this is at present a pure speculation but, after all, we have not yet got down to proof in this matter.

The difficulty of getting at facts regarding heredity is of course obvious, but I am convinced that sufficient attention has never been paid to the effects of in-breeding, and it may be that our present

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conception of the meaning of the term will require a considerable extension in the future. I have come across no reference to in-breeding in any of the ordinary text-books, though its dangers must be obvious, even if one considers that the transmission of obvious "taints" should be avoided. It is generally recognized that defective parents tend to breed defective descendants, and when one remembers the small population of Great Britain, for instance, two hundred years ago, it is clear that there must be a good deal of in-breeding here. On the other hand there is probably no country in existence in which there has been more admixture of races. Investigation of this subject in England would be a matter of immense difficulty, but a clear-cut group like the Parsi community in Bombay provides what should be a promising field for inquiry. This, however, must be effected by a Parsi, as the race is jealously secretive about any matter pertaining to the "family."

In any case the Parsi stock is now so seriously tainted with dementia præcox that the propriety of their abandonment of the mating of cousins should be seriously considered.

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A STUDY OF INCO-ORDINATE MOVEMENT IN EPILEPSY.

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SENSORI-motor disturbances resulting from gross lesions of the nervous system are, as a rule, easily demonstrated. Slight degrees of inco-ordination, however, associated with disturbances of consciousness and attention, are, by the ordinary clinical methods of examination, sometimes most difficult to discover. In psychic conditions, such as emotional and subnormal states, manic-depressive insanity and schizophrenia, sensori-motor disturbances may manifest themselves in the form of tremors, inhibitions, inco-ordination and accelerated or sluggish action.

In epilepsy, apart from *petit* and *grand mal* attacks, sensori-motor anomalies of a very subtle nature can also be demonstrated.

Serog investigated the reaction times in epileptics and found that they were increased, while Gross discovered that the threshold might either be raised or lowered and that these disturbances were inconstant.

Wiersma, Marie and Toulouse have indicated that the reaction times in epileptics and other psychopaths varies from 0·3 sec. to 0·5 sec., the normal time for auditory being 0·15 sec., visual 0·195 sec., and tactile reactions 0·145 sec. (Richet). Godefroy, at the Wilhelmina-Gasthuis, found the figures of the French authorities rather high, but he suggests that possibly his cases were examined at an earlier stage in their illness.

It is generally recognized that perception and apperception in the epileptic are poor, and in explanation Stransky offers the concept of "intra-psychic ataxia." This I understand to be the inability of the "psychic centres" to co-ordinate efferent and afferent stimuli.

The motor disturbances in dementia præcox are probably due to inhibitions, but Godefroy considers that in epilepsy inco-ordination of movement both in regard to direction and time is due to disturbances of consciousness. This "intra-psychic ataxia" is sometimes obvious when the epileptic is telling a story. He tends to wander from the point, gives unnecessary details, and reverts to points which he has already made perfectly clear. Frequently he

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is slow in grasping the significance of simple instructions, which at other times give him no difficulty. In the later stages of the disease this lack of psychic control with fluctuation in consciousness may be observed in the movements of the patient. He may alter the speed of an action or he may stop momentarily, and then continue the movement where he left off. During these "absences" the movements are usually aimless. One can only conclude that these anomalies are secondary to psycho-motor, psycho-sensory or intra-psychic disturbances.

These fluctuations in conscious control can be demonstrated with the aid of Wiersma's self-timing pencil, though the method gives no indication of aberration in the direction of the movement. Fluctuations are present in the normal, but never to the same extent as in the epileptic.

In submitting the epileptic to such tests as "touch the nose with the forefinger," inco-ordination may or may not be observed. What usually happens is that the epileptic shows slight inco-ordination on the first attempt, and the physician, to make certain, requests a second or third attempt, which may be carried out within the limits of normality. It is obvious, therefore, that in these cases a more accurate method of registering the speed and direction of a movement is necessary. This might be done with the cinema camera, but the procedure is not altogether satisfactory. For practical purposes a photographic plate and a beam of light are sufficiently accurate. One objection to this method, however, is that it requires patience.

The apparatus consists of a quarter-plate stand camera, a square wooden frame, a flash-lamp bulb with small holder and some form of make-and-break to interrupt the current to the flash-lamp.

From wood-strip ($\frac{1}{2}$ in. by $2\frac{1}{2}$ in.) a frame is made—inside measurement 30 cm. by 30 cm. On the inner sides of the frame wooden blocks (1 cm. by 1 cm., and eleven per side) are inserted, 3 cm. apart. The frame is supported on a wooden base. It is painted white and the blocks are numbered in black. The blocks on the top horizontal side are indicated by the odd numbers 1 to 21 and the corresponding blocks on the lower horizontal side with the even numbers 2 to 22. From above downwards the left perpendicular side is numbered 1 to 21 and the right perpendicular side 2 to 22. The frame has now been numbered for testing the right hand. It is then reversed and numbered accordingly for the left hand (see photographs).

A piece of three-ply wood, cut to the outside dimensions of the

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frame, is covered with black paper on one side, and for ease in manipulation a knob or handle is attached to the other. The black side is lined off in white into squares. To facilitate this the back should be placed against the frame and the position of the blocks marked on it. The horizontal lines are drawn from the lower edges of the lateral blocks. Two perpendicular lines are drawn from the sides of blocks 11 and 12, and the other perpendicular lines from the outer sides of the blocks on either sides of blocks 11 and 12 (see photographs).

Since the tested person is required to touch all the lateral knobs on the frame, some means must be adopted for registering the course of his movements. This is done by attaching the flash-lamp bulb to the finger of a glove which the tested person wears on his forefinger. In order to time the movement the lamp is made to flash at known intervals. For practical purposes 32 flashes per second were found to be satisfactory. To produce the flicker a make-and-break of an electric bell and a dry battery were first used, but had to be discarded as the speed of the instrument was variable. A six-volt motor was substituted, with a make-and-break on the end of the armature, giving one flash per revolution. This was driven from the main electricity supply, the current passing through a resistance lamp, a six-volt accumulator and a small resistance coil, which controlled the speed of the machine. The flash-lamp derived its power from the six-volt accumulator *viâ* the make-and-break on the motor. Incidentally this lamp (4 volts) required six volts before photographic registration was satisfactory.

The test is carried out in a darkened room which can, if necessary, be illuminated with white or red lights.

The tuning of the machine to 32 revolutions per second is a matter of trial and error, but the procedure is simple. The camera is focused on the frame by one operator and a photographic plate inserted (speed 850). The room is darkened and another operator starts the motor, adjusts the speed to approximately 32 per sec., and then moves the flickering lamp in a circular manner in the plane of the frame. The assistant at the camera simultaneously operates a stop-watch and exposes the plate. The time of the exposure is noted and the number of flashes registered on the photographic plate ascertained. A simple calculation will now give the speed of the motor per second. The speed of the machine is then adjusted and checked accordingly.

The test.—The room is illuminated with a red light, which must be sufficiently bright to facilitate the reading of the numbers on

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the frame. The camera is focused on the frame and a plate inserted in readiness. The person tested has the flash-lamp fixed to his right fore-finger, and facing the camera, takes up a position behind the frame, his right shoulder being in line with the centre of the square. He is requested to touch all the knobs on the perpendicular sides of the frame, commencing with abduction, 1, 2, 3, 4, etc., and finishing at knob 22. It should be impressed upon him that he is about to carry out a series of movements of equal value (abduction + adduction), and that the test is one of maximal effort—that is, he must work as quickly and accurately as possible. He may perform the test once in order to make certain that he understands what is required of him. Having done this he is again requested to place his finger behind knob No. 1 and the flash-lamp is switched on. The assistant at the camera exposes the photographic plate and gives the pre-arranged signal for the tested person to start.

As the flickering lamp travels to and fro its course is being registered by the camera. Immediately the tested person crosses the square 21 times the camera shutter is closed, and the time taken is noted on the stop-watch. The lined back is now placed accurately against the frame, the white lights switched on, and the frame and back re-photographed. The frame is turned about and the test repeated for the left hand.

When the plates are developed one has photographs in which is recorded, by means of a series of white dots, the course of the tested person's hand, as well as the thin horizontal and perpendicular lines which serve as a means of estimating deviation and time.

As the squares formed by these lines are fairly large, the test person has a reasonable working margin. The limit of accuracy is determined by the size of the squares, but it is doubtful if the use of smaller squares would be more helpful.

The degree of efficiency with which the test is performed is estimated as follows. It will be observed from the photographs that there are 121 small squares inside the frame. If the light lines 1—2, 2—3, 3—4, etc., are geometrically correct, certain squares will have only one light line, while others will have two. In short, all the horizontal squares between knobs 1 and 2 will have one line except the last two, which will have two, because these two squares will also contain the line running 2—3. Two lines will be found in all the other squares except the last two squares between knobs 21—22, which will contain only one line. The number of lines in all the squares total 231. Since it is impossible for anyone to be

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geometrically correct (this can be demonstrated by making the squares smaller), the error will be estimated according to the number of squares—up or down—the test person has deviated from the geometrical course.

If the letter " Q " is used to denote 231, the possible number of squares for geometrical precision for one hand, then " 2Q " represents 462—for both hands. But the tested person may deviate into squares above or below the geometrical course, and if " F " equals this error for one hand, then " F (r + 1) " represents the error for both hands.

It will be observed that the hand swings across the frame 21 times —a total of 42 for both hands. It is necessary to ascertain the average maximum speed in crossing the frame, and this is done by counting the dots between the perpendicular lines 7—8 and 15—16, taking the total for both hands and dividing by 42. The average time is given in $\frac{1}{32}$ sec. This figure will be represented by the letter " t." The formula $\frac{2Q - F(r + 1)}{t}$ gives the number of squares correct per time unit. But since it is necessary to take the error factor into consideration, the formula will require to be—

$$\frac{2Q - F(r + 1)}{F(r + 1) \times t} = \text{index of precision.}$$

The higher this figure is, the more efficiently the test will be carried out. In the normal the average figure obtained was 1·97, and for epileptics 0·61.

The motion errors, however, have only been indicated in two planes, so it is possible that the difference between the normal and the abnormal would be greater if the third dimension were also considered. Some of the epileptics could not keep within the plane of the frame. If " T," the total time taken for the whole test, is divided by the index of precision, the normal and abnormal are again thrown into different groups (normal average 65·1, epileptic 351·20).

Thirty-one normal persons, drawn mostly from the nursing, domestic and tradesmen staffs and 37 epileptics were subjected to the test. Each person was examined in order to eliminate possible error due to peripheral nerve trouble, defective vision or deformities. The epileptics tested were all workers, and were sufficiently " intelligent " to understand what was required of them. The photogram, Fig. 1, Normal A, is that of a normal person, and the table of figures indicates the readings. Fig. 2B is the photogram of an epileptic who appeared " sufficiently trustworthy and mentally

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well " to be discharged to the care of her friends. In spite of her improved mental condition she shows marked motor inco-ordination.

When the photograms of epileptics were compared with those of " normals " the former showed the following characteristics :

(1) Greater number of errors in the direction of the movement. (Normal average 78·30, epileptic 188·30.)

(2) Greater variation in the time taken to cross the field.

(3) Greater hesitation and uncertainty in changing the direction of the movements from abduction to adduction, and *vice versâ*.

(4) Greater difficulty in performing the more difficult movement of adduction, which in the test involves a perpendicular as well as a horizontal movement.

(5) The tendency to revert to the same knob—" harping."

(6) The greater time taken for the whole test. (Normal average 32·5 sec., epileptic 43·06 sec.).

These peculiarities were found in most of the epileptics, although a few of the less severe cases (excellent at sewing or book-keeping) produced photograms which were apparently normal. On the other hand, some of the " normals " were to be found along with the epileptics. All these " normals," however, were of slow mentality, poor efficiency or neurotic. One had strabismus and defective vision, which no doubt explains the low figure.

It would appear, therefore, that apparently normal individuals may suffer from marked inco-ordination of fine muscular control. In 1928 it was reported by the American Civil Aviation Authorities that during the first six months of that year 47% of the air accidents were due to the faulty judgment of the pilot and not to weather conditions or defects in the machines. W. Ash, of the Bureau of Foreign and Domestic Commerce, stated that " in nearly 47 out of 100 cases the cause was the error of the pilot and other similar personal ineffectiveness." It is obvious that there are vocations in which a high index of precision is imperative, and one wonders in contemplating the above figures how many of these unfortunate pilots would have shown, if tested, either a permanent or a temporary low index figure of precision. The fact that in epilepsy the variations in direction and time tend to fluctuate throughout the test suggest that the disturbance is psychic in origin. As the disease advances the aberration in the direction of the movement becomes much greater than the variation in its time. A raised threshold and slow apperception, with resulting delay in apprehending muscular and visual sensations, might possibly explain the difficulty the epileptic has in correcting his

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The reading of photogram: Fig. 1 normal.

	Deviation. UP. R	L	DOWN. R	L	TIME. R	L		Deviation. UP. R	L	DOWN. R	L	TIME. R	L
1 - 2.	-	-	6	6	4.5	5	2 - 3.	-	-	1	-	4.5	4.5
3 - 4.	-	-	-	-	4.5	5.5	4 - 5.	-	-	-	-	4.5	5.5
5 - 6.	-	-	-	-	4.5	6.	6 - 7.	-	-	-	-	4.	5.5
7 - 8.	-	-	-	-	4.5	5.5	8 - 9.	-	-	-	-	4.	5.5
9 -10	-	-	-	-	5.	6.	10- 11.	-	-	-	-	5.5	5.5
11 -12.	-	-	-	-	4.5	5.	12 -13.	-	-	-	-	4.5	5.
13 -14.	-	-	-	-	4.5	4.5	14 -15.	-	-	-	1	4.5	5.
15 -16.	-	-	-	-	4.5	5.5	16 -17.	-	-	-	-	5.	5.5
17 -18.	-	-	-	4	4.5	5.5	18 -19.	-	-	1	-	4.	5.
19 -20.	-	-	-	3	4.5	5.	20 -21.	-	-	1	-	4.	5.
21 -22.	-	-	-	-	4.	5.5							
	-	-	6	13	49.5	59.0		-	-	3	1	44.5	52.0

Total Time (T)
Right. 14.4sec.
Left. 17.4sec.

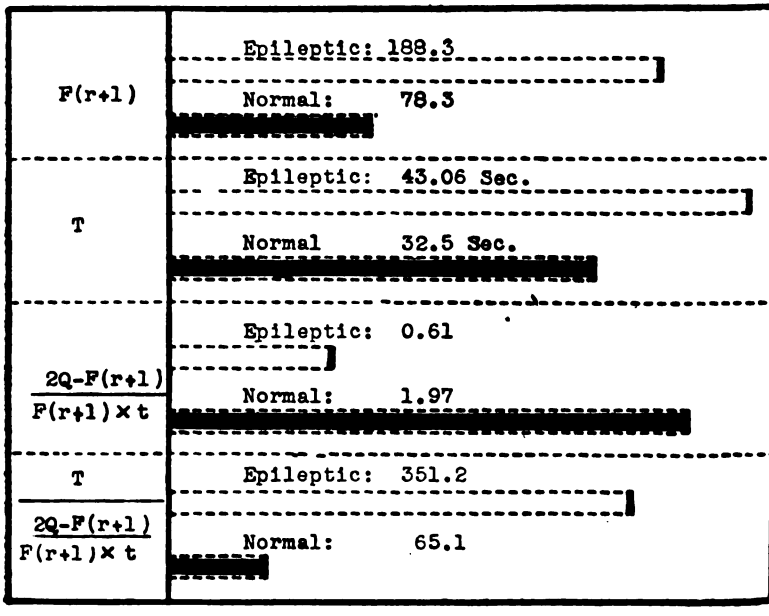
Total Error (E+l)
R.....9
L.....14
23

Speed. (t).
R..... 94
L.....111
205

T.....31.8
F(r+l) 23
t.....4.8

$$\frac{2Q - F(r+l)}{F(r+l) \times t} = 3.9 \text{ (Coefficient of Precision).}$$

Diagram illustrating the marked difference in the average results of the test in epileptic and normal subjects.



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PHOTOGRAMS.

FIG. 1 (A, B, C).—Photograms of three exceptionally accurate "normal" subjects.

FIG. 2 (A, B, C, D).—Photograms of four epileptics.

A. Male, æt. 17; fits per year 10; intelligent worker. Note the variation in the time taken to cross the centre of the field.

B. Female, æt. 38; fits per year 8; intelligent worker. Sufficiently well mentally to be discharged. Note the tendency to revert to the same knob.

C. Female, æt. 24; fits per year 10; very childish. Note the marked inco-ordination of movement.

D. Female, æt 22; fits per year 4; intelligent, but irritable and quarrelsome. The left hand shows a variation in the times taken to cross the field. At knob 1 (right hand), the patient started but stopped, although exhorted to proceed. It would appear that she had a short "absence," followed by an aimless movement. It will be observed that she touched each knob more than once before proceeding to the next.

FIG. 3.—The photogram is that of a case of encephalitis lethargica with advanced Parkinsonian symptoms in the right hand. The patient's left hand appeared normal, but the photogram shows that movement is slow, tremulous and uncertain.

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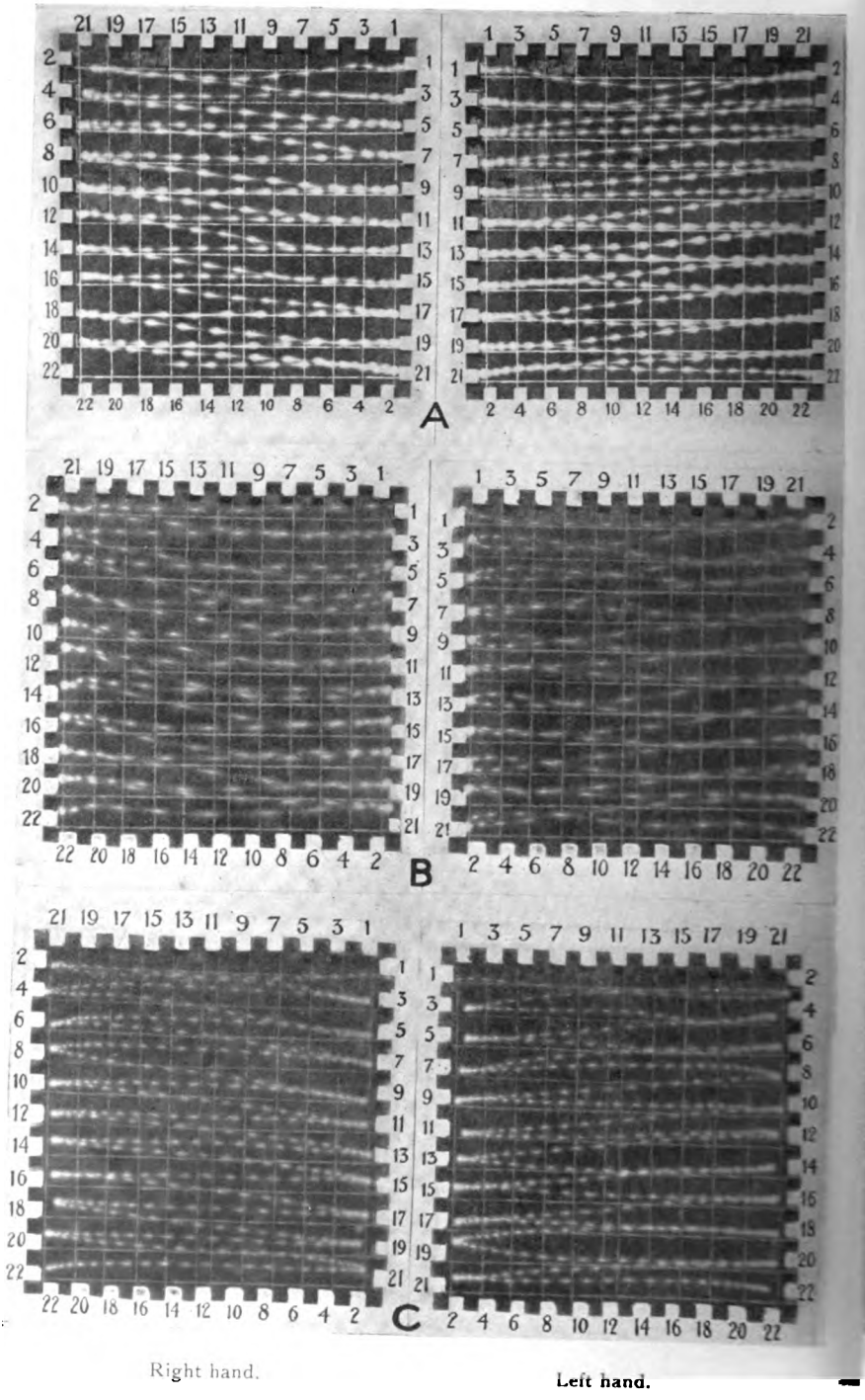

FIG. 1.—Photograms. Normal (A, B, C).

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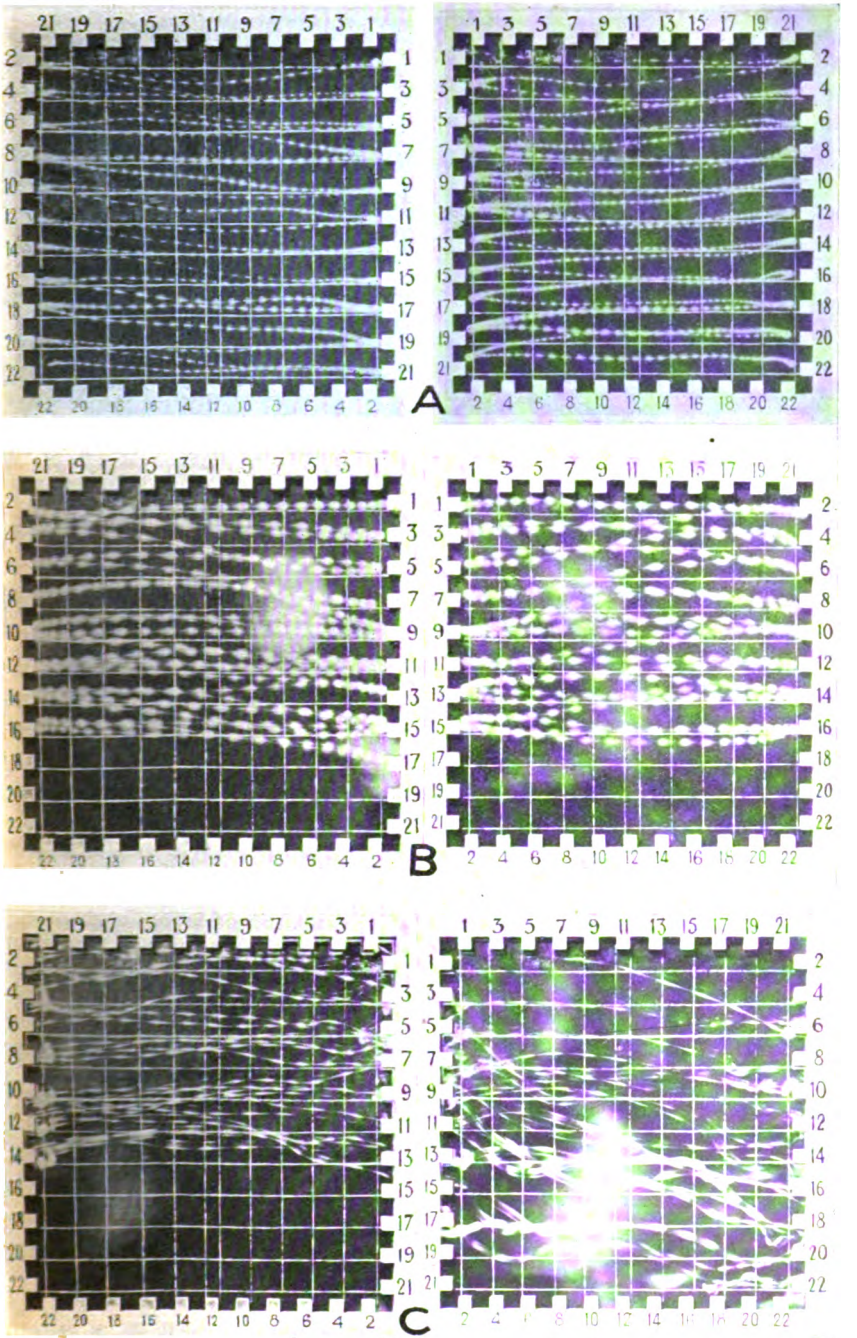

Right hand. Left hand.

FIG. 2.—Photograms. Epileptic (A, B, C).

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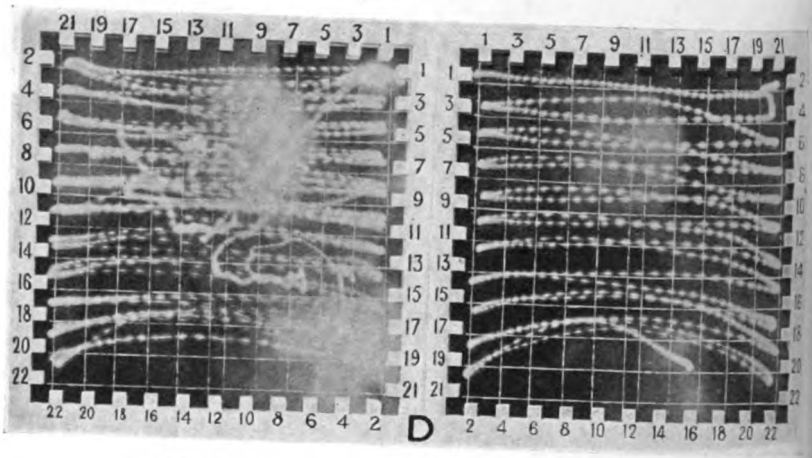
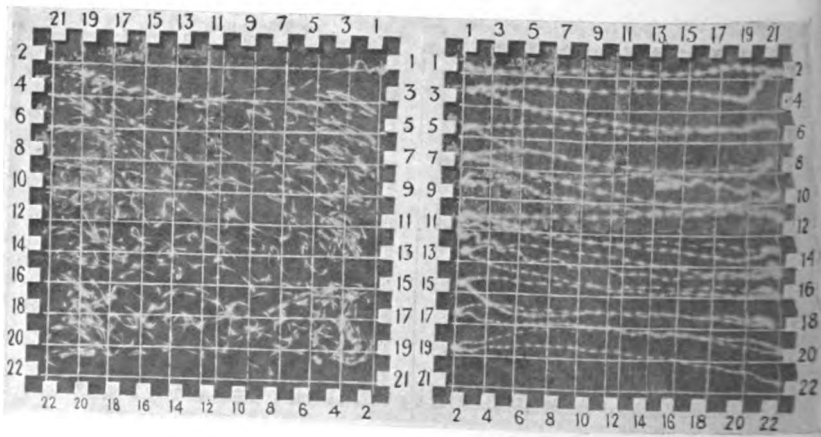


Right hand. Left hand.

FIG. 2 (*cont.*).—Photogram. Epileptic (D).



Right hand. Left hand.

FIG. 3.—Photogram. Encephalitis lethargica.

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finer movements. In the worst cases of those tested the errors in direction were so great that they could not be properly estimated—yet these epileptics were all good workers with no "apparent" inco-ordination of movement.

An examination of the times taken to cross the field revealed little difference in the duration. The rhythm of the normal, however, is that of a pendulum, while in the epileptic the rhythm is variable (Fig. 2A).

The total time taken for the complete test is much greater in the epileptic (average 43·06 sec.) than in the normal (average 32·5), the former losing a considerable amount of time in changing direction and correcting his errors, especially in the more difficult slanting movement of adduction.

Fig. 3 is a photogram of one of two cases of encephalitis lethargica with Parkinsonian symptoms in one hand. In each case the movement and reflexes of the other arm appeared normal, but the photograms show an uncertainty of action which is greater than normal.

It is difficult to say whether this method of testing psycho-sensori-motor precision would be of practical value, *e.g.*, in the examination of candidates for 'bus driving or for the Air Service, but the procedure makes it possible to record graphically the time and co-ordination of a movement, and it affords a means of estimating mathematically the relative degree of precision.

It shows, morever, that in epilepsy difficulty in directing a movement is an early symptom, and that as the disease progresses this symptom becomes very marked. The test also demonstrates graphically that the epileptic is subject to transitory difficulty in changing from one idea to another, that the facility of making the idea "follow through" fluctuates, and that when "jamming" takes place the former idea tends to be repeated.

According to Bryan the development of general motor precision continues until puberty, when it becomes physiologically complete. In young epileptics this development may have been arrested. The incoordination of older cases, to which Godefroy(1) has applied the term "dystaxia epileptica," is probably due to progressive changes in the cerebral cortex.

It is impossible to publish the photograms of all the cases tested, but the diagrams submitted indicate the marked differences in the average mathematical results obtained in normals and epileptics, and they also demonstrate that the epileptic is slower and less precise in his movements than the normal.

Reference.—(1) *Psych. en Neurol. Bladen*, nr. 1–2, 1921.

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THE ÆTIOLOGY OF GENERAL PARALYSIS OF THE INSANE.

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In studying the ætiology of any ailment it is profitable to assume that no disease has a single cause. All the manifestations which constitute disease are the result of a disturbance of equilibrium between the human organism and its environment. In the production of this disharmony many factors play a part, each varying in importance from case to case. Nevertheless, since the discoveries of Pasteur we have become accustomed to view diseases mainly from the standpoint of their causative organisms, thereby neglecting many equally important factors in their ætiology. Yet we know of many instances where these selfsame pathogenic agents reside in the human body without producing any symptoms of disease. The meningococcus and diphtheria bacillus are found in the air-passages of many healthy people, while after the disease has run its course, the causative organism in typhoid may continue to occupy the body indefinitely. Moreover it frequently happens that living parasites of malaria, purposely introduced into the human subject, fail to produce any symptoms after many weeks of incubation. In cases of this nature it may transpire that the addition of further noxious influence, such as an injection of milk or even a cold bath, may precipitate the symptoms of malaria, which thereafter runs its normal course. Conversely, there are many individuals, or groups of individuals, who are particularly prone to fall victim to maladies from which others appear to be protected. The mentally disordered are very liable to infection by the Flexner group of organisms, while those who nurse them are seldom attacked. Such illustrations, which might be multiplied indefinitely, serve as a useful reminder of the complex factors at work in the production of diseases of microbic origin. The soil is just as important as the seed, and no study of ætiology would be complete were the question of individual susceptibility to be omitted. In accordance with this principle we shall here

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approach the problems attending the causation of general paralysis by asking ourselves three questions:

What is the inherent nature of the soil?

What do we know about the seed?

Are there any circumstances which retard or accelerate the development of the seed after it has been sown within the body?

The Inherent Nature of the Soil.

Heredity.—The importance of psychopathic heredity in general paralysis does not seem to have received the recognition that it undoubtedly deserves. Thus, Craig (1) in his *Psychological Medicine*, makes the statement that "heredity does not play a very important part in the causation of general paralysis," and few of the other text-books in general use make any reference to the matter at all. The brilliant work on the subject published by Bolton (2) constitutes a notable exception. Bolton personally inquired into the family histories of 72 general paralytics and obtained evidence of psychopathic heredity in 81·9% of these. He is of the opinion (3) that "the subjects of this form of mental disorder would, if they had not been syphilised, have suffered from one or other form of primary neuronic dementia." He supports this argument by references to the pathological similarity between general paralysis and senile dementia, and from this and from other evidence he concludes (4) "that the ordinary sane individual and the ordinary psychopath, or potential lunatic, if possessed of cortical neurones of average durability, may suffer from syphilis with impunity as regards the future onset of dementia paralytica."

The present writer recently examined the records of Brentwood Mental Hospital over a period of 22 years with the object of ascertaining the amount of insane heredity that existed among general paralytics. It soon became clear, however, that after the introduction of the Wassermann reaction, the interest in the family histories of these patients rapidly waned. Subsequent to the year 1913 insane and alcoholic heredity, as contributory factors in the causation of this disease, are scarcely mentioned in the records. Prior to 1913 there are frequent entries of this nature. Thus in 1909 there was a history of insane heredity in 30% of male general paralytics directly admitted to the hospital. The remaining direct admissions for this year, 236 in number, gave a similar history in only 25% of cases. Records of this nature, made during the routine performance of duties by individuals who were uninfluenced by preconceived ideas, are of considerable value.

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The figures quoted here entirely leave out of consideration the presence or absence of epileptic or other forms of neuropathic heredity, and are probably much too low. In the Sixty-seventh Report of the Commissioners of Lunacy, which covers the years 1907 to 1911, it is stated that the percentage of insane heredity found among all classes of male admissions to asylums was 20%, but figures of this nature can be only approximately correct. All that is urged here is that, if in one year 30% of general paralytics give a history of insane heredity, against 25% in other types of insanity, the stock of the paretic is at least as important as the stock of the ordinary mental patient. It is reasonable to infer that a large number of individuals of the former class come into the world with inferior nervous systems definitely predisposed to disease.

This is consistent with what one finds in other forms of mental disorder which are associated with gross physical disease. In that most tragic of ailments, encephalitis lethargica, a certain number of the victims ultimately drift into the public mental hospitals. Some of these patients are certified purely for their physical incapacity and helplessness, but amongst those who show clearly defined symptoms of insanity we elicit evidence of a psychopathic ancestry too frequently for pure coincidence. It is the same with the insanities of purely toxic origin. An attack of influenza, or the birth of a child, have little effect on a constitutionally sound nervous system.

There are, therefore, substantial grounds for believing that in general paralysis the spirochæte attacks the *locus minoris resistentiæ*, and there securely entrenches itself. It follows that those who contract syphilis and who give a bad family history should receive special attention at the venereal clinics. May not these these be just the individuals whose cerebro-spinal fluids remain positive in spite of prolonged and energetic treatment?

What We Know About the Seed.

The syphilitic origin of dementia paralytica has now been established beyond all shadow of doubt, but it is equally obvious to the psychiatrist that in the vast majority of these cases the early syphilitic manifestations must have been very slight, or absent altogether. It frequently happens that patients who would have no compunction in making such an admission deny all knowledge of ever having had the complaint, and there is a considerable amount

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of evidence in support of the contention that an individual may become infected without any noticeable primary lesion making its appearance. Be that as it may, the fact cannot be disputed that a history of a rash occurring during the secondary stage is rarely elicited in cases of general paralysis.

In this connection it will be of interest to quote from L. W. Harrison's recent article on the treatment of syphilis (5) in which he cites some experiments made by Brown and Pearce. These investigators carried out observations on rabbits which had been inoculated with *Spirochæta pallida*. They found that the severity of any phase in the syphilitic manifestations was influenced by the intensity of reaction in the previous phases. Thus, if a rabbit had two primary sores it was much less likely to develop generalized lesions than if it had only one. Further, if the development of the primary lesion or lesions was interfered with by the excision of the area of inoculation, or by administering antisyphilitic remedies in subcurative doses, the rabbit was much more likely to develop generalized lesions. Brown and Pearce found in fact that they could more or less determine the locality of metastatic lesions by interfering with the primary sore at given stages of development. The earlier they interfered, the more complete and extensive the subsequent secondary syphilitic manifestations. As Harrison points out, they show that the "syphilised animal develops a resistance to the spirochæte of syphilis, which is proportional to the degree and duration of the interaction between spirochætes and tissues." He suggests that if treatment of syphilitics were withheld until the appearance of an eruption on the skin and mucous membrane, the effect would be to confer a strong degree of resistance to the tissues generally, including those of the central nervous system. Harrison does not, however, recommend this procedure and points out the very serious risks involved in such a course of action.

It is a far cry from the experimentally produced condition in the rabbit to the acquired disease in man, but were the conclusions based on the above-mentioned experiments to be accepted, they would offer a satisfactory explanation of the relative infrequency of general paralysis among uncivilized communities. The observed facts which originated the aphorism that general paralysis is a product of syphilisation and civilization might conceivably have arisen from the absence of facilities for treatment among uncivilized races. When, however, we turn from these observations on animals to the potential general paralytic, we find

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that the suggested explanation does not quite fit the facts. Some of these patients have definitely not had anti-syphilitic treatment, and in spite of this their nervous systems have become affected. Again, an untreated case of syphilis may never have a rash, though it is difficult to compute the proportion of such cases in which the rash fails to appear. May not the syphilitic eruption be of the nature of an allergic reaction due to syphilisation in a previous generation? At all events the appearance of a rash is of good omen as regards the subsequent development of paresis, and this fact is worthy of very serious consideration from a possible therapeutic standpoint. Might not a primary cutaneous spirochætal disease, such as yaws, exert a beneficial influence on general paralysis?

Let us now turn to the cerebro-spinal fluid in cases of primary and secondary syphilis. The available data all go to show that the cerebro-spinal fluid can become affected at a very early stage of the syphilitic process. Mills (6) reports that of 283 cases of primary syphilis investigated by him, 8·83% gave a positive Wassermann reaction in the cerebro-spinal fluid. Moreover, of the cases in which the blood was negative, 4·76% showed a positive reaction in the spinal fluid. Among 768 treated and untreated cases of secondary syphilis Mills obtained a positive Wassermann reaction in 35·4% of spinal fluids, and in his total series of 1051 cases of primary and secondary syphilis 299 or 28·35% gave positive fluids. Ravaut, on the other hand, found that 60 to 70% of syphilitics gave a positive cerebro-spinal fluid, and that this number went down to 25 to 50% in late cases of the disease independently of treatment.

While it is estimated that only about 4% of syphilitics subsequently develop dementia paralytica, it is probable that all patients whose cerebro-spinal fluids persistently give a positive Wassermann reaction, ultimately show nervous symptoms of some sort, if they are observed for a sufficiently long period. However, even in advanced untreated cases of general paralysis the strength of the Wassermann reaction in the spinal fluid fluctuates from year to year, and this point should be borne in mind when estimating the value of any threapeutic measure. In this connection it is interesting to note that the paretic gold curve also fluctuates quite apart from any treatment instituted. In mental hospital practice, where it is a simple matter to perform lumbar punctures at frequent intervals over a period of years, this fact becomes very obvious.

In cases of early syphilis the first cerebro-spinal fluid change is an increase of lymphocytes. Next a colloidal gold curve is obtained, and finally the Wassermann becomes positive. This is exactly

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the same order in which these findings are affected in a general paralytic who has been treated with malaria and who is going to recover. The Wassermann reaction takes months or years to become negative, whereas the gold curve undergoes modification quite early. The lymphocytes must show an immediate and marked reduction in number if the treatment has been of any avail.

After the fifth year, a latent period commences which terminates with the onset of general paralysis. This is, however, a very vague and indefinite period. Brains of individuals who have been killed during these years of apparent quiescence have shown marked alterations in the direction of general paralysis, although no symptoms have been presented during life, and the spirochæte itself has been demonstrated in the cerebral tissues as early as six weeks after infection.* Again, as in every other branch of psychiatry, the borderline between mental health and illness is very ill-defined. Even in acute cases careful enquiry into the happenings of the preceding years will often elicit a history of vague personality changes, or of slight aberrations of behaviour. The onset is never really as acute as it appears, and indeed it is inconceivable that the spirochæte could occupy the human brain for twenty years or more without producing some symptoms of maladjustment.

Circumstances which Influence the Development of the Seed.

Alcohol.—No investigation into the causation of general paralysis would be complete were the question of alcoholism to be ignored. Twenty years ago, when the ætiology of this disease attracted more attention than it does now, alcohol was frequently found to be a contributory factor in its production. Thus in the year 1909 34% of the male general paralytics admitted to Brentwood Mental Hospital gave a history of alcoholic excess. It may be argued that in those days alcohol was a contributory factor in many varieties of mental disease. This undoubtedly is true, but as a matter of fact out of 236 male patients admitted to the hospital in the same year suffering from other types of mental disease, only 44 or 18% gave a history of chronic alcoholism. It must, of course, be borne in mind that the early paretic may take to drink owing to his exaggerated feeling of well-being, coupled with his lessened self-control, but alcoholism of this type is unlikely to extend over

* The writer heard this authoritatively stated by Dattner in a lecture given at the Wagner Jauregg Clinic, Vienna.

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a number of years, and in all probability the percentage quoted above is reliable.

Now the prevalence of alcoholism in this country has greatly declined since the year 1915. This is well shown by the substantial reduction in the mortality-rate for cirrhosis of the liver, as well as by the marked diminution in the number of convictions for drunkenness. If, therefore, alcoholic excess has ever had an important bearing on the ætiology of general paralysis, one would expect to find a corresponding decline in the incidence of the disease. That this is actually the case is demonstrated by the statistics collected by the Board of Control, which we shall consider later. For the present, attention need be drawn only to the fact that the reduction in the incidence of the disease is a little greater among men than women, a point which would favour alcoholism as a contributory factor in its production.

There is, moreover, a marked similarity between the signs and symptoms produced by certain forms of alcoholic degeneration of the nervous system, and those which result from syphilitic disease. Thus, on the physical side we get the pseudo-paretic with his convulsions, his slurred speech, his tremors, and his sluggish pupillary reactions; while in the psychological sphere the association of general mental incapacity with grandiose delusions often renders the diagnosis between syphilis and alcohol very difficult. Again, in general paralysis the earliest symptoms of the disease consist in a deterioration of those functions of the nervous system which were the latest to be acquired. The same is true of alcoholism. The Advisory Committee to the Liquor Traffic Control Board stated in their report in 1917 (7) that "alcohol successively weakens and suspends the hierarchy of functions of the brain, and therefore of the mind, in the order from above downwards; that is to say, in the inverse order of their development in the individual and in the race." It seems, therefore, reasonable to infer that when the two toxins of syphilis and alcohol are acting simultaneously on the same nervous system, the one will reinforce the effects of the other, and hasten the degenerative process.

Salvarsan.—Assuming that arsenobenzol preparations came into general use about the year 1912, we should now be in a position, after the lapse of eighteen years, to form a fair estimate of their success in reducing the incidence of general paralysis. In the opinion of some neurologists, parasyphilitic diseases of the nervous system has increased in frequency since arsenical compounds were first utilized in the treatment of primary and secondary

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syphilis. Here we must, of necessity, confine ourselves to cases of general paralysis which have undergone certification, but we are fortunate in having at our disposal exact figures for purposes of comparison.

The statistics issued by the Board of Control dealing with the number of fresh cases of general paralysis admitted annually under certificate to the institutions of England and Wales for the years 1907 to 1928, excluding the period of the war, are given below:

Year.	(First attack cases.) Male admissions.	Female admissions.	Year.	(First attack cases.) Male admissions.	Female admissions.
1907	1104	194	1921	939	150
1908	1193	198	1922	994	169
1909	1199	221	1923	997	191
1910	1192	217	1924	909	157
1911	1237	224	1925	945	155
1912	1285	241	1926	953	165
1913	1160	214	1927	934	197
1914	1267	184	1928	854	190
1920	976	154			

If we take the quinquennial period 1907 to 1911, which immediately preceded the introduction of salvarsan, we find that the average number of male general paralytics admitted annually was 1185, while for the corresponding period 1924 to 1928 it was 919. This represents a reduction of about 22%. Turning now to the statistics for females, we find that the average number of patients admitted annually for the years 1907 to 1911 was 210, while for the quinquennial period 1924 to 1928 it was 172, which represents a reduction of about 18%.

Not only has the number of insane general paralytics diminished, but there has, in addition, been a definite change in the age-incidence of the disease. The writer has examined the records of 684 male general paralytics admitted to Brentwood Mental Hospital over a period extending from 1907 to 1928, but excluding the years of the War. The ages of these patients on admission were noted and arranged into decennial groups, the juvenile paralytics being excluded. A classification of this nature shows a gradual shifting of the age-incidence of the disease in the direction of the older age-groups. The bulk of the figures cannot be given here, but it may be mentioned that whereas out of 392 patients admitted between 1907 and 1915, only 14% were over 50 years of age, amongst 292 admissions between 1920 and 1928 28% were over 50.

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In evaluating figures of this nature, which relate to cases admitted over a large number of years, several factors have to be taken into account. In the first place, the population has increased considerably, and, therefore, the decrease in the incidence of the disease is really greater than it appears. Secondly, with the introduction of serological tests, and the equipment of mental hospitals with up-to-date laboratories, possibly a larger number of patients than formerly are diagnosed as paretics. This factor may also affect the statistics of reduction unfavourably. In spite of these two adverse influences we find a reduction of 22% and 18% in the male and female admission-rates respectively, as compared with the statistics of admission prior to 1914.

Can this reduction in numbers, as well as the change in the age-incidence of the disease, be properly attributed to the beneficial effects of arsenobenzol preparations on early syphilis? It is certainly tempting to accept this explanation, but there are several contradictory facts which merit the most careful consideration. We have already seen that alcohol must be reckoned with as an ætiological factor in the production of general paralysis, and we have also seen that during the years under consideration alcoholism has substantially declined. This must have contributed in some degree towards diminishing the number of certified paretics.

Again, if we turn to another more or less chronic disease of microbic origin, such as pulmonary tuberculosis, against which no specific therapy has been devised, we find a similar diminution in prevalence. The following table gives the annual number of new cases of pulmonary tuberculosis which have come to the knowledge of the Ministry of Health from 1913 to 1928.

Year.	New Cases of pulmonary tuberculosis.	Year.	New Cases of pulmonary tuberculosis.
1913	80,788	1921	56,344
1914	76,109	1922	53,422
1915	68,309	1923	59,172
1916	68,109	1924	60,747
1917	68,801	1925	60,770
1918	71,631	1926	59,520
1919	61,154	1927	58,109
1920	57,844	1928	57,682

These figures were kindly supplied to the writer by Dr. A. S. MacNalty, of the Ministry of Health by the courtesy of Sir George Newman. The figures for 1923 to 1928, inclusive, are not strictly comparable with those for previous years but there is no contra-indication to their use for the purpose of the present argument.

If, as before, we divide the figures into two quinquennial periods, 1913 to 1917 and 1924 to 1928 respectively, and compare the average

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annual incidence in the two groups, we find that in this disease also there has been a reduction of about 18% in the notifications within a period of 15 years. This is another sound argument against attributing too much importance to the beneficial effects of salvarsan in eliminating general paralysis. Better conditions of living must also play their part by improving the resistance of the body towards the infecting agent.

Finally, a word must be mentioned about a type of general paralysis the ætiology of which has a special bearing on the subject under discussion. This refers to the individual who first develops mental symptoms while actually undergoing treatment with salvarsan. The writer has under his observation at present two such cases. The first, a woman, was admitted to Brentwood Mental Hospital in 1926. She had been taking her baby to one of the London Hospitals for treatment, and for some reason, presumably connected with the baby, she herself was given salvarsan. A fortnight after one of her arsenical injections she developed acute mental symptoms, necessitating certification. She has never recovered, in spite of malarial treatment. The second case is that of a man who, prior to admission to Brentwood, was attending the out-patient department of a London hospital for gastric crises, these being the only symptoms of tabes, although the physical signs were marked. He had been given 1·8 grm. of neosalvarsan, and while under treatment developed mental symptoms, for which he had to be certified. It is interesting to note that in both of these cases the cerebro-spinal fluid findings were substantially modified by the salvarsan treatment in spite of the development of insanity.

For all these reasons it is difficult to say whether the introduction of arsenobenzol preparations in the treatment of syphilis has or has not reduced the incidence of general paralysis. All things considered, it would appear that their influence in this direction has been very slight, and the writer is convinced that it is positively harmful to employ such preparations in the treatment of so-called parasyphilitic diseases of the nervous system, unless they are combined with one or other form of pyrexial therapy.

General Remarks.

We have now briefly reviewed some of the factors which appear to have a bearing on the causation of general paralysis. Before concluding, a few remarks must be made on an aspect of the disease which is not unrelated to ætiology.

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It has been pointed out by Rolleston (8) that a number of diseases have of recent years changed their clinical characters. He cites as examples scarlatina, acute rheumatism, pneumonia, smallpox and syphilis, and he points out that the alterations in type may be due to modifications either in the condition of the host or in that of the invading organism. He also urges (9) that "as disease is not a fixed entity but a reaction of the complex organism to varying degrees of injurious influence, it is reasonable to anticipate that with altered conditions in the soil or the host, such as are rapidly and most obviously produced by famine and war, the reactions would vary accordingly, even if the morbid agent remained the same." Now the suggestion has recently been put forward in psychiatric circles that the clinical manifestations of general paralysis are altering in type; that the physical signs are not as constant as they used to be, and that the patients live longer, even when treatment is withheld. With the object of testing the validity of this contention the present writer investigated the records of two series of one hundred consecutive cases of general paralysis admitted to Brentwood Mental Hospital. The first series dealt with 100 patients admitted from January 1, 1907 onwards, and the second with a similar number commencing on January 1, 1922, fifteen years later. In neither of these series did the question of the possible effect of malarial therapy arise. The results of this investigation are tabulated below.

100 consecutive admissions from January 1st, 1907.		100 consecutive admissions from January 1st, 1922.	
Physical sign.	Number of cases.	Physical sign.	Number of cases.
Argyll-Robertson Pupils	70	Argyll-Robertson pupils	72
Slurred speech	63	Slurred speech	61
Lingual tremor	48	Lingual tremor	53
Seizures	53	Seizures	65
Absent knee-jerks	27	Absent knee-jerks	31
Exaggerated knee-jerks	19	Exaggerated knee-jerks	46
Mental type.	**Number of cases.**	**Mental type.**	**Number of cases.**
Grandiose	43	Grandiose	36
Demented	40	Demented	53
Depressed	5	Depressed	5
Miscellaneous	12	Miscellaneous	6
Total	100	Total	100

The above-mentioned figures show that the distribution of classical physical signs is remarkably similar throughout each series. Pupillary reactions have always been normal in about 30% of general

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paralytics, and they continue to remain so. The second series shows some increase in the percentage of cases exhibiting seizures, but this is not very marked. On the psychological side simple dementing types have become more numerous, while grandiose delusions are not manifested as frequently as formerly. On the whole, the clinical manifestations of the disease have not undergone any marked alteration after the passage of fifteen years.

In order to answer the question whether untreated general paralytics tend to live longer now than in years gone by, a further comparison as regards duration of life has been made between the two series of cases already quoted. The results are given below:

100 consecutive admissions from January 1st, 1907.		100 consecutive admisssions from January 1st, 1922.	
Duration of life after admission.	Number of cases.	Duration of life after admission.	Number of cases.
Under 1 month	27	Under 1 month	33
1 to 6 months	40	1 to 6 months	41
6 months to 1 year	15	6 months to 1 year	11
1 year to 2 years	5	1 year to 2 years	9
2 to 3 years	5	2 to 3 years	0
Over 3 years	0	Over 3 years	1
Transferred to other hospitals	6	Transferred to other hospitals	1
Discharged	2	Discharged	4
Total	100	Total	100

It will be seen that here again there is very little difference between the two groups: much the same proportion of cases survives for similar periods in each series. We shall, therefore, be safe in attributing to the beneficial effects of malarial therapy any marked variation from these figures, which may be shown in subsequent statistics. All the above-mentioned cases have been diagnosed primarily on clinical grounds. Brander (10) has drawn attention to the danger of relying too much on laboratory findings in labelling cases as general paralysis. There are undoubtedly a few people nowadays who consider that every certified patient giving a positive Wassermann reaction in his cerebrospinal fluid should be regarded as a general paralytic. In the vast majority of cases the diagnosis will be correct, but it is a fatal error to allow laboratory findings to overrule clinical observations and experience. As Brander pertinently remarks, "general paralysis was a definite clinical entity long before laboratory tests were heard of."

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A word of thanks is due to the authorities at Brentwood Mental Hospital for sanctioning the publication of the foregoing statistics.

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PERSEVERATION IN THE INSANE EPILEPTIC.

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ONE of the main difficulties encountered in the study of psychology is the lack of exact definition in its terms. In psychopathology this difficulty is intensified and many authorities use the same term with widely varied meanings. This is especially noticeable with the term "perseveration." Some writers restrict its use to describing a subsidiary symptom of apraxia or agnosia, and limit its application to the repetition of an already executed movement in the presence of desire to make a fresh movement. Others write of agnostic perseveration as being synonymous with ideational inertia, and define it as the persistence of an idea in the process of recognition. Woodworth (1) defines perseveration as recall seeming to occur without a stimulus, and considers that some undetected external stimulus is necessary. Dumville (2) holds that perseveration is much the same as retentiveness, and limits its meaning to spontaneous revival in the case only of intense experiences, tracing a close connection between perseveration and association.

Spearman (3) suggests that the perseveration factor, "P," may measure the degree of inertia in mental energy in the same way as the factor "G" (general ability) may measure the quantity of mental energy, approximating to a measure of intelligence. The basis of perseveration lies in the fact that a residuum of excitement remains after stimulation. The measurement of the residual excitement may give an indication of the amount of inertia present. Spearman's law of inertia is concerned with cognitive processes, and in the following tests an attempt has been made to investigate experimentally the motor, sensory and ideational features of perseveration in insane epileptics. The general scheme of the tests follows that elaborated by Wynn Jones, to whose paper (4) the writer is much indebted. Over 200 separate tests were carried out, and in every test a control was done under identical conditions with normal subjects. All the patients tested suffered from frequent attacks of *grand mal* associated with certifiable psychoses.

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Sensory Tests.

(1) *The rotating coloured discs.*—Two discs were used, one being red/green, the other blue/yellow. Each subject was tested independently with both. The disc was rotated by an electric motor started at a high speed, which was gradually reduced until the subject could clearly distinguish the two colours, the rate of revolutions at this point being read from a revolution-counter. The table shows the average speed at which the two colours were detected.

Revolutions per minute:

	Normal. (10 subjects.)	Male epileptics. (10 cases.)	Female epileptics. (10 cases.)
Red/green	649	541	431
Blue/yellow	732	548	512

(2) *Visual adaptation.* Each subject was placed at a distance of one metre in front of a glass screen illuminated from behind by a high-powered electric bulb. The screen was regarded steadily for two minutes, the rest of the room being in darkness. The light was then extinguished, and the only illumination present was a faint glow obtained from a dry-cell battery and bulb which was projected on to a definite portion of the screen. As soon as the subject detected the glow he was instructed to place his finger on the light spot on the screen. The time taken between the extinguishing of the bright light and the detection of the dull glow was noted by means of a stop-watch. The average time taken by each group is given below:

Normal. (10 subjects.)	Male epileptics. (10 cases.)	Female epileptics. (10 cases.)
65·5 secs.	123·5 secs.	99 secs.

Motor Test.

The motor test used was that elaborated by Wynn Jones, called the reverse stroke test. Other motor tests can of course be used, and should supplement this test in a more comprehensive investigation.

The reverse stroke test consists of two parts:

A. The subject is told to write the figures 2, 3, 6, 7 as quickly as possible, no attention being paid to the quality of the writing so long as it is legible. Thirty seconds is allowed for this part.

B. In the second part the subject is instructed to write the same

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figures, but to commence to write from the bottom of the figure instead of the top. Hence the direction of the movements used in the writing is reversed. Time allowed for this part is 2 minutes.

A measure of efficiency is given by the formula—

$$E = \frac{n_2}{4n_1},$$

where n_1 and n are the number of figures written in part A and B respectively. The following table gives the average efficiency of each group tested:

Normal. (10 subjects.)	Male epileptics. (10 cases)	Female epileptics. (10 cases.)
·343	·224	·155

Ideational Tests.

The following two fluency tests were used in place of intelligence tests, both on account of their simplicity, and because the processes of association involved are more readily tested in this way, and are not so dependent on the amount of education the subject has received. It should, however, be noted, as has been pointed out by Spearman (5), that part of what was usually attributed to perseveration consists of an inhibited flow of ideas or a loss of fluency.

The first test applied was the "animals" test. The subject was instructed to give the names of as many animals as he could in the time allowed—one minute. One mark was given for each name. The group averages for this test are as follows:

Normal. (10 subjects.)	Male epileptics. (10 cases.)	Female epileptics. (10 cases.)
22·7	12·0	11·1

The second test used was the "blots" test. The subject was asked to enumerate all the objects of which the blot reminded him. Any resemblance, fancied or otherwise, was to be given within the specified time of one minute. Two marks were allowed for each meaning. The average number of marks for each group was:

Normal. (10 subjects.)	Male epileptics. (10 cases.)	Female epileptics. (10 cases.)
16·4	7·2	6·7

Conclusions.

Consideration of these results seems to show that perseveration is a feature of the peculiar mental state of insane epileptics between

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attacks. The predominating factor in the associated psychosis naturally has a bearing upon the results, and in this connection it is of interest to contrast the findings obtained from similar tests applied to cases of mania and melancholia.

The results in the motor and ideational tests were better in cases of mania than in melancholia according to Wynn Jones's findings (4), while the male epileptic results were better than the female epileptic results in the colour test, the motor test and the ideational tests. While differentiation upon these lines is obviously inadequate, it is a point worthy of notice that all the male epileptics tested were prone to maniacal outbursts, while the female epileptics were more inclined towards the melancholic syndrome. Taking the results as a whole, it would appear that mental inertia as measured by perseveration is one of the peculiarities of the epileptic constitution.

My thanks are due to Dr. P. C. Coombes, Medical Superintendent of Netherne Mental Hospital, for permission to publish these notes.

References.—(1) Woodworth, *Psychology.*—(2) Dumville, *Fundamentals of Psychology.*—(3) Spearman, *The Abilities of Man.*—(4) Wynn Jones, *Journ. Ment. Sci.*, October, 1928.—(5) Spearman, Maudsley Lecture, *Journ. Ment. Sci.*, 1929, p. 357.

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Medico-Legal Notes.

Rex *v.* Daniel Kenneally.

This case was originally tried at the Central Criminal Court. The accused was charged with the attempted murder of a fellow-workman named Broomfield. At the time of the offence, Kenneally is reported to have said "That man killed my father, and I have killed him. Am I right in doing so?" The father was not dead, and had had no quarrel with Broomfield. At the trial, Kenneally pleaded "Guilty" on the advice of his counsel, who appears to have thought that the facts were not strong enough to bring the case within the McNaghten criteria, or was, perhaps, unwilling to run the risk of the indefinite detention which follows a verdict of "Guilty but Insane." Under these circumstances, the Court had no option but to pass sentence, and this sentence was one of ten years' penal servitude. Against this sentence Kenneally appealed. Meanwhile, he had been certified insane in prison, and he has been, or is about to be transferred to a mental hospital.

The case came before the Court of Criminal Appeal on June 2. The sentence was reduced from ten to three years' penal servitude. The judges appear to have disliked the possibility that Kenneally might recover, and would then be liable to serve the remainder of his original sentence.

The case provides another example of the present peculiar state of the law relating to insane persons who are accused of criminal acts.

Rex. *v.* Edward Marjarem.

This case was tried at the Central Criminal Court, on May 22, before Mr. Justice Humphreys.

The accused, a labourer, aged 23 years, was charged with the murder of Edith May Parker, at Dartford Heath, on April 11, by stabbing her in the back. When arrested, he made the following statement, "I bought a butcher's knife for two shillings. I never

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spoke to them. I just got up and done it, and threw the knife away. I did not know it was so bad. I only thought I had wounded her. I forgot to add the motive, it was robbery, I was out of work, and wanted money."

The facts were not disputed, and the defence was that of insanity, stress being laid on the apparent absence of motive, for there appears to have been no attempt at robbery.

The police evidence was to the effect that Marjarem, on arrest, was remarkably cool, having regard to the serious nature of the charge, and that, on a previous occasion, he had given himself up for a murder in a shop at Reading.

Marjarem's mother said that he had an abscess on the brain at 5 years of age; that he was in the habit of picking up knives, and drawing them across his throat; that he had attacked her with a pair of tongs, and had thrown cups at her; that he had once tried to strangle his younger brother; and that, two years ago, he had attempted to commit suicide by coal-gas poisoning.

On the other hand, Dr. Watson, the Medical Officer of Brixton Prison, Dr. W. D. Higson, the Medical Officer of Maidstone Prison, and another medical witness, stated that Marjarem had shown no signs of mental disease during the time that he had been under observation.

Marjarem was found "Guilty," was sentenced to death, and has been hanged. The circumstances of the case suggest that he was a man of peculiar mentality, further details of which would be of much interest.

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Occasional Notes.

PSYCHOLOGY THE SCIENCE OF MIND.*

Psychology as the science of mind dates from the middle of the nineteenth century, when the physicist came to the aid of the psychologist. The physiologist had entered the field some thirty years before that, but his methods effected little progress, as he had not yet learned that a purely physical inquiry can never reveal a mental act.

To go further back, although the philosophy or phenomenology of mind (to give the subject its ancient title) began its severance from pure speculation and superstition in the middle of the sixteenth century, it remained very largely a branch of metaphysics and the battle-ground of the rival schools of sensationalists and transcendentalists. It was not, therefore, surprising that from the first, introspectionists and physiologists were at daggers drawn in their attempts to explain the phenomena of mind. When, however, these phenomena became the subject of careful experiment and exact measurement, both rivals were to some extent chastened in their aspirations.

The appearance of Fechner's great work, *Elemente der Psychophysik*, in 1860, was an important landmark in this progress to the status of a pure science, but it was not until 1880, when Sir Francis Galton announced the results of his "inquiry into human faculty and its development," that psychology as a true science was born.

Galton had studied the differences in the imagery of different persons, and his method and the facts it revealed pointed the way to the solution of a 2,000-year-old problem. Great credit, however, was due to Prof. J. McK. Cattell, first of Pennsylvania and later of Columbia University, who refined and extended Galton's methods.

The most important results were:

1. The establishment of mental tests of ability. Mental facts rather than physical facts (physiognomy, phrenology, anatomical stigmata, and so forth) came to be relied upon in estimating the state of the mind.

* "The Introduction to Great Britain's Contribution to the International Mental Hygiene Library," *vide Mental Hygiene*, vol. xiv, No. 2, April, 1930, pp. 429–444.

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2. The formulation, in due course, of laws having a genuinely scientific foundation, embracing cognition, affection, and conation. The decisive factor here was the fine work of Spearman and his assistants; his mathematical method of measuring correlations of psychological data, his discovery —or perhaps one should say his demonstration and measurement—of a general factor of ability, "G," underlying all abilities, and other fundamental work.

Thus the re-naming of the philosophy or phenomenology of mind, "psychology" by one Rudolphus Goelenios of Marburg in 1594 has come to be justified, and for the future we must define psychology as "the science of the abilities of man to think, feel, and do." Modern psychology can rightfully claim a place among the biological sciences, and may with confidence look forward to a linkage with them. Metaphysics can resume its own sphere without again encroaching on psychology, and be more read and better understood; while psychology can surrender to logic that which it ought never to have claimed.

We must not, however, be led to think that these were the only events of great importance in British developments in mental hygiene.

About the time when the physiologist came to the aid of the psychologist, which happened first in Germany, biological and dynamic conceptions in psychology began to take a firmer hold and relieved in a wonderful way the materialistic stagnation in psychiatry. The term "biology" was unknown until 1802, but the subject it defined made immense strides from Darwin's work in 1859 and, among other achievements, vitalized psychology. Animal psychology began to take shape in the eighteenth and early nineteenth century, but in 1896 Lloyd Morgan placed it on a more scientific basis when he published his *Animal Life and Intelligence*. As part of the biological advance, the remarkable developments of abnormal psychology in France and Germany, which have been reflected in this country in the work of Jones, Rivers, Stoddart, Hart, Crichton-Miller, Bradley and a host of others, must not be omitted. Again, the "hormic" psychology of Aristotle, represented chiefly among living psychologists by McDougall, and lately further rationalized and amplified by Devine in his application of it to psychiatry, has found an important place in British psychiatry and psychology and has acted as a curb on the extreme mechanistic or behaviouristic school.

The influence of Mott's monumental work in neurology, psychiatry

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and sociology is too large a subject to be more than mentioned here. It is fully dealt with in the *Mott Memorial Volume*.

The great point of all these developments—especially the advent of biological and dynamic conceptions in both normal and abnormal psychology, the invention of mental tests of ability, and so forth—is that they have enabled the mental-hygiene movement in Great Britain (1922) to broaden its outlook and invade, as in America, the ever-widening field of sociology, perhaps in these days the science most active in the welfare of humanity.

Sociology, as a science, arose about the same time that physiology invaded the realm of psychology, and, curiously, we owe it to Comte (1839), an agnostic in psychology.

A historical *résumé* such as the above is essential to a satisfactory stock-taking in the literary field of the present-day mental-hygiene movement. We must first, however, briefly describe the delimitation in this country of mental hygiene as brought about by the facts of history. This is a difficult matter, for of late events have been rapid, and stabilization, let alone finality, cannot yet be announced. Some facts in this regard are, however, apparent

1. Mental hygiene is a part of the larger subject of public health, the modern conception of which embraces preventive medicine in every direction.

2. Mental hygiene will always be a mosaic of subjects such as psychology, psychiatry, eugenics, biology, sociology, and so forth. Religion, ethics, and law cannot be excluded, as they vitally affect the life both of the community and the individual.

3. Mental hygiene is needed only as a dynamic body of knowledge. Though the theoretical aspects are amply cared for otherwise, the study of them is essential to mental hygiene as a dynamism.

4. The literary field of mental hygiene is necessarily wide and includes every body of knowledge likely to increase our insight in the many and difficult problems mental hygiene is out to solve.

J. R. Lord.

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Part II.—Reviews.

Encephalitis Lethargica; Its Sequelæ and its Treatment [*Die Encephalitis Lethargica: ihre Nachkrankheiten und ihre Behandlung*]. Von. Prof. Dr. C. v. Economo. Berlin und Wien: Urban & Schwarzenberg, 1929. Pp. x + 251. Paper cover. Illusts. 21. Price RM. 20.

This is, as far as we know, the most comprehensive monograph yet published on encephalitis lethargica, and it is written by one of the greatest, if not the greatest, of authorities on this disease. We have endeavoured to make it available in English to those not conversant with German, and though our efforts have not yet been successful, there is still hope that an English edition will be published before very long.

The need for such an authoritative and comprehensive monograph has been long felt, as the literature on this disease has grown too bulky for the practical purposes of both student and teacher. Von Economo, recognizing the impossibility, within the space of a monograph, of including a complete bibliography, contents himself with drawing attention to the fundamental works, giving references to Netter, Achard, Reinhard, Keys, Konos, Stern, Smith (Public Health Reports), Nonne Economo, La Torre, Hall (*Epidemic Encephalitis*, Bristol, 1924, and *Med. Res. Council Reports*, Nos. 108 and 124), Wimmer, Levaditi, Luger and Lauda. He also advises reference to Oppenheim's "Die Encephalitis und der Hirnabszess," Nothnagel's *Handbuch*, Bd. ix, p. 2; Oppenheim and Cassirer's *Die Encephalitis*; and Wohlwill and Strauss's "Nichteitrige Entzündungen des Zentralnervensystems" in Kraus-Burgch's *Spezielle Path. u. Ther. inn. Krkhtn.*

For a complete bibliography, if such is desired, one is referred to the *Zentralblatt f. Neur. u. Psychiat.*, where the subject is indexed under "Encephalitis."

More than 500 authors are referred to in the text, which number represents only a tithe of those who have written on the subject. Among those most frequently quoted are Claude, Creutzfeldt, Cruchet, Dimitz, Dorr, Fuchs, Gerstmann, Grosz, Hoff, Jakob, Jelliffe, Kauders, l'Hermite, Marinesco, Nonne, Pappenheim, Redlich, Schachere, Schilder, Sicard, Silberstein, Stiefler, Wagner v. Jauregg and Wiesner. British authors to whom, among others, reference is made include Ball, Burrows, Cook, Duncan, Grant, Harris, Jones, Leahy, McCowan, McNalty, Shaw, Turnbull and Wilson. We miss, however, references to the good work done by other British workers, such as Greenfield, Riddoch, Mapother, Marshall, Cloake and others.

This enormous growth of literature on a subject about which

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until 1917 so little was known shows the important position it has attained among mental and nervous diseases and the necessity for its closest study by all students and practitioners. For this purpose nothing better has ever been written than this monograph.

Much as we should have liked, we cannot attempt in a short review to discuss the many facts and view-points set out in a publication of this kind. Some account, however, of the ground it covers can be given.

Chapter I, "General Introduction," deals with the discovery and naming of the disease, its history, the epidemiology of the outbreak of 1915–25, its infectious character (contagion, incubation, predisposition) and its ætiology. Chapter II, on "The Acute Form," describes its general nosology (lethargic-ophthalmoplegic, hyperkinetic, amyostatic-akinetic and other types), its course, prognosis, therapy, prevention, pathological anatomy, differential diagnosis, nosological position and its relationship to influenza and influenzal encephalitis.

Chapter III treats of "Post-Encephalitic Diseases" under sections devoted to residual and convalescent states, chronic post-encephalitis (Parkinsonianism and pseudo-psychopathies), symptomatology, differential diagnosis, pathological anatomy, ætiology and therapy.

Chapter IV, "Retrospect," summarizes what the occurrence and study of this disease have taught us in respect of the vegetative functions, sleep, motivity (especially extra-pyramidal) and tonus, and psychic disorders, etc. A digest of this chapter will in due course appear in our "Epitome," for reasons which will at once be apparent and are therefore unnecessary to mention.

As regards the other chapters, that dealing with the discovery and naming of the disease is of some general interest, having regards to the claim made by Dr. Cruchet that priority in respect of the former must be given to him. There can be no doubt from the facts which appear in this monograph that this cannot be sustained. For one thing, Von Economo's original paper on this disease was published in the journal of the *Wiener Gesellschaft für Psychiatrie und Neurologie* for April 17, 1917. Cruchet's paper, "Encéphalomyelite subaiguë (diffuse)" was read before the *Société médicale des hôpitaux de Paris* on April 27 of the same year. There is no dispute in regard to the author's naming of the disease "Encephalitis Lethargica." In his original paper Von Economo also described non-lethargic forms and announced the probable identity of this disease with that of former epidemics like "nona." He points this out because others since have thought the name was given in ignorance of the occurrence of these non-lethargic forms, and this, among other reasons, had led to some adopting the term "Encephalitis Epidemica." He goes on to give reasons against the change, one of the most cogent being the existence of other encephalitides which occur in epidemic form, but have nothing in common with the disease under discussion. He concludes by remarking that now-a-days physicians who favour a "plastic" conception of disease prefer the original name, while others who

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incline to a categorical classification of diseases use the term "encephalitis epidemica."

In the commentary on the epidemiology of the 1915–25 epidemic, the author shows that the first cases occurred in 1915 in Rumania and were of the lethargic-ophthalmoplegic and hyperkinetic types.

The historical data are excerpted from the author's report to the Congress for Internal Medicine, Vienna, 1923. "Lethargy with fever" was mentioned by Hippocrates, Coelius Aurelianus and Aretæus of Cappadocia; lethargic forms of influenza occurred in the European epidemic of 1580; comatose fever with sleepy symptoms in London in 1673–75; sleepy sickness with ocular disturbances is reported as occurring in 1695; sleepy sickness (or sweating sickness) with influenza in Tübingen in 1712; an epidemic of fever with stupor and apoplexy in London in 1723–27; lethargic form of influenza in Rouen in 1763; an epidemic of sleepiness and meningitis in Eisenach in 1767; lethargic cases of influenza in 1775; influenza epidemic with cases of lethargy, delirium, cramps and neuralgia in 1780–82; influenza outbreak with marked cerebral symptoms in 1830–33; a myoclonic form of encephalitis occurred in 1846, and the "Nona" outbreak in Northern Italy in 1889–90. In this, the last outbreak prior to that of 1915–25, influenzal cases were associated with hæmorrhagic encephalitis, coma, apoplexy, epilepsy, paralysis agitans, chorea, and tremors. Associated with the widespread European outbreak in 1915 to 1925, the occurrence, in 1917, in Queensland and New South Wales of an outbreak of fever characterized by convulsions, sleepiness and bulbar paralysis with a mortality of 70% is an interesting epidemiological fact.

We might add, for our own part, the appearance in 1919 of this disease in China.

We venture to congratulate Prof. von Economo on the successful conclusion of what must have been a laborious task of months' possibly years' duration, for which all interested in this disease and its protean manifestations should be grateful to him. The illustrations are well done, and add much to the value of the book.

J. R. Lord.

Epilepsy. By L. J. J. Muskens, M.D. Foreword by Sir Charles S. Sherrington, F.R.S. London: Baillière, Tindall & Cox. 1928. Royal 8vo. Pp. 431. Price 27*s.* 6*d.*

Dr. Muskens had already made his influence felt in experimental neurology some twenty years ago, before he turned his attention to the elucidation of the problems of epilepsy, and especially of "experimental epilepsy" in animals presenting phenomena which

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may be identified with or related to epilepsy in man. His interest, however, really dates from his early association with Winkler and Dana. His physiological outlook was acquired under Engelman and Bowditch, and was much influenced by the neurological work of Sherrington and Richet. The clinical trends of his studies took shape while acting as clinical clerk to Hughlings Jackson, Gowers and Horsley.

The work before us, in which are incorporated both his physiological and clinical researches in convulsive disorders, he claims to be a product of the British and American schools of neurology.

Such were the credentials of Dr. Muskens when, in 1926, the maturation of his work led him to publish his *Epilepsie; Vergleichende Pathogenese, Erscheinungen, Behandlung* (Julius Springer, Berlin). It was appropriate that there should be an edition in English, and this materialized in the book before us. Readers must understand, however, that this English edition is not a literal translation of the original, but a new edition—opportunity being taken for a thorough revision of the text, with the insertion of additional material.

It must also be remembered that it is primarily a neurological work and the treatment of the subject from the view-point of modern psycho-pathology was not to be expected. It is none the less a work of great interest to psychiatrists who have the largest clinical experience of this subject.

Dr. Muskens' painstaking experimental work has led to the theory that the myoclonic epileptic fit in the higher vetrebrates is a reflex after-discharge, serving mainly as a method of rendering certain toxins inactive, and that it is a common prototype of genuine epilepsy. This explanation soon casts a spell over the reader, which can never be entirely effaced, however much predilections favour other views. As far back as 1909 the author definitely established the fact that in man myoclonic epilepsy is the most common of all epileptic motor variants. He stressed at the same time the nosological significance of its early appearance, which has had ample confirmation since, and is further emphasized in this work.

It is regrettable that this form of epileptic variant is often entirely overlooked or not properly appreciated, and so no precaution or treatment is adopted until too late. In the author's opinion more than half the cases of genuine epilepsy may be regarded as myoclonic epilepsy in a wider sense.

Parts I and II of the book (190 pages) are devoted to the author's anatomo-physiological research work. Part III, mainly clinical, occupies the remaining 241 pages, but includes a short chapter on pathological anatomy.

Several pertinent questions are asked in the sections devoted to psychic considerations. Are "absences" and "equivalents" always present in epilepsy? "Is epilepsy essentially a psychosis?" "Are psychic phenomena to be regarded in some cases at least, as a substitute for regular epileptic fits? Why should some cases of epilepsy deteriorate mentally after a few fits and others suffer the

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malady for years with practically no effect mentally? What is the relationship of catatonia and alcoholic mental explosions to epilepsy? "Does psychical deterioration form an inseparable part of epilepsy?" "Do myoclonic convulsions, fits, headaches' fainting fits, dreamy mental states, etc., form the entity epilepsy?" "Is too much stress laid upon the 'epileptic character'?"

We wish we had time to discuss the author's views and conclusions on these fascinating questions, but can assure our readers that they are worthy of close study. We mention them in support of our opinion that the author is not guilty of neglecting the psychic aspect of the malady, as contended in some reviews which have already appeared. On the contrary we regard his contribution to the solution of such problems as most valuable. The work is easily the most comprehensive, fundamental and scientific obtainable at the present time.

J. R. LORD.

The Life Worth Living: A Series of Short Essays on Intimate Personal Problems. By ELMER SIDNEY PRATHER. Foreword by BRIGGS DAVENPORT. Brussels: Elmer Sidney Prather, 1929. 12mo. Pp. 336. Price 6*s*.

This is the third publication by Elmer Sidney Prather submitted to us for review. As indicated by the title, he is both author and publisher. The *Encyclopædia of Psychology* which Mr. Prather edited brought the gospel of mental hygiene to bear in the homes of the people; *Imprisoned Splendour*, by R. Dimsdale Stocker, was a literary gem which appealed to the heart of man; the present work does not so much appeal to emotion as to intellect. It offers a practical philosophy of life which is not beyond the understanding of any man. It is an ethical rather than a psychological work.

It reveals a deep understanding of human nature and an abundance of common sense and applies them to the crises of life, the needs, and the legitimate aspirations of humanity. It is a message of hope and encouragement from a layman to laymen, conveyed in language both vigorous and expressive and refreshingly American.

Its twenty-three chapters mostly deal with moral subjects, such as "Purity," "Sincerity," "Honesty," "Truthfulness," "Friendship," "Forgiveness," etc., but two are devoted to "Character Building," three to "Suggestion," and the remainder more to psychological subjects, such as "Ability," "Discrimination," "Will Power," etc. The psychological attitude adopted is the belief in the Talmud, that "All is regulated by Providence except human conduct, "which," as the author says, "is a fact needing emphasis today." We are also told that "in a superlative degree life is what you deliberately make it. Character is formed by the interplay of thoughts and acts. Of this psychic and corporeal inter-action, personal association and environment are largely the consequence." This is teaching sound in practice though many would quarrel with them in theory.

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Capacity, he says, should not be confused with ability. Ability was once a legal term meaning resources, power and estate; later it had an economic meaning—revenue and income; to-day it means the sense of one's best personal power. Capacity implies the idea of receptivity and demonstrates what is in one; ability implies the idea of giving, and expresses what one does.

Knowledge is a pyramid of ideas, built upon ascertained fact. We need to know things, humanity and ourselves—the threefold aspect of knowledge.

Truth is the conformity of a thought to a thing.

Justice means the protection of the rights of each individual and is the corner stone of society. It implies reasonableness and judgment.

True ambition is a steadfast desire, imperiously ripening into a forceful purpose, to produce something which is worth while.

The senses are the source of external, consciousness that of internal perception.

Will-power is something which works a change in oneself, in one's action and in one's environment.

Energy finds its visible and outward manifestation in "determination."

Courage is the inner quality which enables one to meet all the perplexities of life with daring, hopefulness and determination; bravery is its outward manifestation.

Concentration means the complete awakening and utilization of consciousness.

Suggestion makes the ideal real; it is a silent partner and wonder worker.

The fundamental idea of usefulness is being usable.

In the chapter on "Thought Transference," the author asks "If there is a transmission of character to offspring, why can there not be a transmission of ideas to minds at a distance?"

We do not propose to discuss these brieflets, even if we had space and time. It is enough to mention them as showing the trends of Mr. Prather's philosophy. At first sight many will be inclined to reject not a few of them as mere paradoxes. If one, however, reflects on them a little, it becomes apparent that they are worthy of more consideration, for which a reading of the book is necessary. If we can induce our readers to essay this we can assure them of a rich reward and many fruitful hours. J. R. LORD.

Aids to Psychiatry. By W. S. DAWSON, M.A., M.D.Oxon., M.R.C.P. Lond., D.P.M. London: Baillière, Tindall & Cox, 1928. Second edition. 6½ in. by 4¼ in. Pp. 312. Price 4*s.* 6*d.* net.

The author has taken the opportunity afforded by the demand for a second edition of revising and amplifying. This has been done carefully and judiciously and the continued success of his book is

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thus assured. The book as it now stands can only be regarded as "little" in the sense that the size of its pages remains at 6½ by 4¼ in. As an actual fact it has become one of some 100,000 words, covering 306 pages of subject-matter, much of which would be difficult to find elsewhere without extensive reading. Another reason for its popularity is that most of the current text-books on psychiatry are presentations of the view-point of some particular teacher or school, so that from the study of any one of them it is almost impossible to find that wide treatment of the subject so necessary to students for examination purposes. The student is therefore in some difficulty and has ordinarily to read more than one text-book, which may in some cases contradict each other on fundamental matters. The students' ideal is a text-book which adequately covers modern psychiatry and its many approaches, and which has not, by reason of size or complexity, lost its direct teaching value and become useful for reference only. Dawson's "Aids" is of this kind, but it is not without personal teaching, and the author's own views and experience are well to the fore. The great point to commend it is that the author has the gift in no small degree of expressing himself clearly and succinctly, and is thus able to illuminate the views of others besides his own. His work is thus an "aid" also in the sense that it helps the student to understand any other text-book on the subject he may be reading. It is also sufficiently encyclopædic to save the student from frequent resource to larger works.

Only one point of criticism occurs to us. Our author states that from a legal point of view an insane person or lunatic is one whose mental disorder is such that he requires to be sent to an asylum under certificate. This, of course, is only partly true, at least in England. We would remind him that under Section 98 of the Lunatic Act, 1890, an alleged lunatic may be "found" and certified to be incapable of managing his affairs but not of managing himself; indeed the Act contemplates that a man may legally be of unsound mind and yet capable of managing himself *and* his affairs. [Cathcart (1892), 1 Ch. 549, 559].

Things are not quite so clear cut as Dr. Dawson says, and the student should be warned of this common fallacy, which is only one of the many pitfalls which the legal aspect of mental disorder presents.

J. R. LORD.

Psychology. By JOHN W. EWEN, M.R.C.S., L.R.C.P., D.P.M. Edinburgh: E. & S. Livingstone, 1929. Catechism Series. Pp. 72. Price 1*s.* 6*d.* net.

The author's *Aids to Psychology*, recently reviewed and commended in this journal, forms the basis of the present work. The text of that book is adapted to the question and answer style of presentation, which has many advantages and was at one time much in

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vogue. There is some additional matter, however, chiefly relating to psychological and psycho-pathological methods of inquiry.

The two books, and especially the present one, form admirable reading for the medical student. J. R. LORD.

The Growth of the Mind. By Sir ROBERT ARMSTRONG-JONES, *C.B.E.*, M.D., D.Sc., F.R.C.P., D.L. The Henderson Trust Lectures, No. IX. Edinburgh: and London: Oliver & Boyd, 1929. Paper. Pp. 29. Price 6*d.*

The Henderson Trust was founded by Mr. William Ramsey Henderson, who died in Edinburgh in 1832. His Trust Disposition and Settlement contained a provision that a sum of money should be applied for the advancement of the science of phrenology. Several methods have been adopted by his trustees to execute Henderson's behests, amongst the more recent of which was the establishment of public lectures relating to the nervous system as might be interpreted to be in accordance with the wishes of the testator. This lecture is the ninth of the series, the first having been delivered by Prof. Elliot Smith.

This essay on the growth of mind is eminently readable and covers in condensed form a good deal of ground. The various definitions and conceptions of mind are discussed, and also the views which have prevailed from the earliest times up to the present day as to the relationship between mind and body. The student will find the account here given of the development of the nervous system, from its elementary form as exhibited in a Medusa, up to its highest and most complex form in man, both interesting and instructive. The lecture concludes with an account of the various psychological functions. Included in this publication are reprints of portraits of distinguished physicians who have been responsible for the administration of the Henderson Trust, and also a number of diagrams of nervous structure which serve to illustrate the text.

H. DEVINE.

Problems of Neurosis: A Book of Case-Histories. By Dr. ALFRED ADLER, edited by PHILIPPE MAIRET, with a Prefatory Essay by F. G. CROOKSHANK, M.D., F.R.C.P. London: Kegan Paul, 1929. Demy 8vo. Pp. xxxvii + 168. Price 8*s.* 6*d.*

There are many who tried to read Dr. Adler's earlier books, but found themselves discouraged because puzzled and irritated by the very laboured translation. Mr. Mairet gives us in this volume a clear and most readable document, free from any of these old handicaps.

There is an unusually long prefatory essay by Dr. Crookshank in the lucid and interesting style that one expects from him. He lays a much-needed emphasis on the "Human" as opposed to the

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"Veterinary" and "Mortuary" schools of medicine in a fashion reminiscent of Dr. George Draper's recent writings.

A very interesting summing up of the different medical psychologies follows, but "the Pupil," one feels, is at times a little over-enthusiastic about "the Teacher," and comparisons with Confucius and Socrates are no substitute for proofs of validity which the critic demands.

Dr. Adler's case-histories are interesting throughout, and valuable as a method of illustrating the fundamental concepts of his Individual Psychology. The very repetitive nature of some of the material helps to enforce his points.

The publisher's jacket states that the book is of great importance to psycho-pathologists, educationists and parents. This is undoubtedly true for the two latter groups, and in reading the book one feels repeatedly convinced of the value of the educational work along Adlerian lines which is being carried out in Austria.

The psycho-pathologist will certainly get something from the book. The theory of the Prototype Law is very clearly expounded and well supported, and there are many interesting and suggestive ideas scattered through the book. Withal, however, there is a certain superficiality and glibness of explanation that disappoints. The psychoses are almost too easy, and "what the Freudians call transference" is hardly worth mention. Despite Dr. Crookshank's statement (p. xxiii) that "in these sentences . . . the path is made clear for the practice of a rational psycho-therapy," and Dr. Adler's assurance in several places that "treatment readily suggests itself," there is a disappointing lack of information about treatment. Those who have tried every method of "explanation" they knew with cases of deep-seated neurosis, are left in the dark as to why the explanations of the individual psychologist should be so outstandingly happy in their results.

Apart from criticisms such as these, however, the book is really interesting and stimulating. It will repay the reading.

J. R. REES.

The Case of Miss R—: The Interpretation of a Life-Story. By ALFRED ADLER. London: George Allen & Unwin. Pp. xxii × 306. Price 12*s.* 6*d.*

This book constitutes an unusual and very valuable method of presenting a case-history. It is unfortunate, we may feel, from the point of view of checking the interpretation, and from the angle of treatment, that Miss R— was not a patient. Indeed, she was personally unknown to Dr. Adler. Her autobiographical reminiscences came to him, and he takes them sentence by sentence just as they were written, commenting on each. The story of the development of an obsessive-compulsive neurosis is told (in large part at any rate), and this serves as a framework upon which Adler has been able to arrange the greater number of his doctrines of "Individual Psychology." Of his own books this is perhaps

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the clearest, and contains the most convincing exposition, and though written for the laity, it is full of interest to the analyst or psycho-pathologist of whatever school he may be.

There are many very illuminating passages in the book. We may quote one of them where Miss R— describes how, as a child (p. 35), "I wanted to escape these thoughts, but they seized me over and over again. They even disturbed me when I prayed at night; then I had to repeat my prayer. It was horrible." Dr. Adler says, "This hammering, this underlining, this absolutely useless emphasis in description are part of the nature of a neurosis; that is, to make something out of nothing. It brings the neurotic nearer his goal of godlikeness." And so he develops his theme of the search for Superiority.

Those who belong to the Freudian School will have very definite criticisms throughout of the interpretations placed upon the material produced, and even those of us who are eclectic will feel that often his interpretation is arbitrary, as where (p. 10) he dismisses the probability of a breast memory alleged to be at five years of age; or (p. 80) where the child, caught up in a quarrel between her parents, says she was "trembling all over." Adler adds, "One cannot do enough in such a situation."

Dr. Adler is really determined not to be a Freudian.

> Miss R—: "When my mother caressed my father, I frequently interfered, stroked his hair, rolled up his shirt sleeves, and kissed his arms."
>
> Dr. A.: "I do not believe this is an expression of sexual love. Any explanation based on sexual consideration is fallacious" (p. 16).

Many of us will agree in great measure with his plea for power rather than sex as the motivation of many of the Œdipus situations, but surely there is usually a common factor and room for both lines of explanation at varying times. As in most books on individual psychology we find exaggerated fear termed cowardice—an unfortunate mistake which will worry some lay readers of these works.

Dr. Adler does not actually write his books. They are taken down in shorthand as he talks, and this explains a certain repetition and lack of system which can be noted.

The book is very well printed, and on the whole, satisfactorily translated, though obviously for America. The reviewer is still left guessing as to the meaning of "puttering" and "teetering," and there is much useless slang which is not even American English.

J. R. Rees.

Mind at the Crossways. By C. Lloyd Morgan, D.Sc., LL.D., F.R.S. London: Williams & Norgate, Ltd., 1929. Demy 8vo. Pp. xii + 276. Price 10*s.* 6*d.* net.

Many years ago, Huxley said that evolution was not an explanation of the cosmic process, but merely a generalized statement of

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the methods and results of that process. This statement, in view of past and present controversies, is worth keeping in mind; and it is the key-note of this book, in which the gifted author continues his exposition of the theory of emergent evolution.

There are two ways of accounting for any event: that which is in accordance with scientific method, and that which attributes the occurrence of the event to the acts of some agent or agents. For the latter way of accounting for an event Prof. Lloyd Morgan employs the term "dramatic explanation"; and he urges that if there be no personal agency, human or other, immanent in nature, there is nothing to interpret in relational terms. Natural interpretation does not preclude dramatic explanation.

In primitive times everything that happened was explained as due to some agent. Prof. Lloyd Morgan believes that something of this dramatic explanation is still carried by the expression "causal efficiency"; he considers that confusion has been produced by the use of the word "cause" in two distinct senses, namely as an answer to the question, "Who did it?" and as an answer to the question, "What were the relations which obtained when it happened?" This confusion he avoids by not using the word "causal" at all, substituting for it the term "effective," as adjectival to relations, and as meaning that when effective relations are present something happens. Mental relations are effective in like sense as are physical relations; and with each item of physiological process we may conjoin an item of subjective awareness. This special type of co-relation of the mental and physical is termed "concomitance," and it differs from "parallelism" (taken in the commonly accepted sense); under parallelism the stress is on reference, under concomitance the stress is on awareness. Life, in physical regard, and subjective awareness, in mental regard, are concomitant; neither has independent existence apart from the other.

To make the point clearer, a helpful analogy is employed. "An arrow of reference" symbolizes some mode of reference to somewhat, on the part of someone. We may assume a hierarchy of such arrows, percipient, perceptive and reflective, in ascending order. In ordinary life, all three kinds of arrow converge on the same objective situation; but under distinguishing analysis the arrows are of at least these three varieties. The object of perception is a synthesis of percipient and perceptive arrow-heads; but appearances, reality, truth, cannot be discussed save under reflection. When arrows of visual behaviour and arrows of visual percipience converge on that which is the centre of perceptive reference there arises a new something, and this comes about through emergence. Oxygen and hydrogen combine to produce water, with properties quite different from those of its component elements; so visual percipience and awareness in eye-behaviour give the "thereness" which we attribute to the object of perceptive reference.

The percipient world is mental; the perceptive world is mental; the world of reflective thought is mental. But this is not meant

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to imply a denial of the existence of a physical order of Nature, if it be not within the field of someone's reference thereto. This physical order of Nature was in existence before any perceptive someone was in being; but only when such a someone came into being did the physical order of Nature come within the orbit of reference.

Here we have Prof. Lloyd Morgan's philosophy. He confesses that, in his younger days, he flirted with epiphenomenalism. He is, however, philosophically indignant with those who assert that he has married his first love. He is now wedded to concomitance, and his days of flirtation are over. His philosophic view has many points in common with that of Spinoza. Perhaps we may describe it as a view which combines the advantages of epiphenomenalism and of idealistic monism, while avoiding the difficulties of both those theories. Body and mind are concomitant; neither exists apart from the other; neither is derived from the other. There is emergence within mind, and there is emergence in body; but there is no emergence of mind from that which is not mental, there is no emergent step from the physical to the mental.

Many complex problems are, of course, raised by this view. On some of these the author touches, and in a manner which renders us anxious to hear more. Freedom and emergence have at least this in common: they stand for indeterminism when and where they obtain. Emergent evolution is the expression of God's purpose; but the sequence of end, attainment, satisfaction, must not be imputed to God, for these are features of a natural person as emergent, and God is not such. God is not the *terminus ad quem* of evolutionary interpretation, but the *terminus a quo* of dramatic explanation.

Finally, a reader might ask why its title has been chosen for the book; and the author provides the answer to this question. Guidance of action cannot be interpreted in terms of physical relatedness only; nor can it be interpreted in terms of mental relatedness only. But guidance of action is the criterion of mind; and so mind, in this sense, stands at a crossway, at the emergent passage from percipience to perception. Further, in another sense, mind is present only when there is control of conduct with ends in view; and in this sense also mind stands at a crossway, at the emergent switch-point of divergence from the ascending line of perception to a new and higher line of ascent, which appears with the advent of reflection. M. HAMBLIN SMITH.

Pleasure and Instinct. By A. H. BURLTON ALLEN. London: Kegan Paul & Co., Ltd., 1930. Demy 8vo. Pp. x + 336. Price 12*s.* 6*d.* net.

The problems connected with pleasure and unpleasure are among the most difficult with which psychology has to deal. The author considers the various theories which have been held, and adopts

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the view that pleasure and unpleasure are dependent upon the success or failure of conation. This, of course, involves a discussion of the nature of instinct. He employs the term "feeling" as an equivalent for pleasure and unpleasure, but without implying his concurrence in the view that these two are the only instances of feeling.

Any conational system of psychology finds a preliminary difficulty in providing an account of the sensory feelings consistent with that of other feelings. The author suggests that there exists in the sense-organs a craving for stimulation, and that sensory feeling depends upon the satisfaction of this craving. Pleasure occurs when the conation towards the maintenance of normal bodily activity is successful. After a review of the experimental work on the physical accompaniments of the feelings, the conclusion is reached that pleasure goes with all maintenance or enhancement of function, but that unpleasure goes only with a depression of function against which there is organic resistance. A primary act of acceptance or rejection is involved in sensory pleasure and unpleasure respectively. The Kantian view that pleasure is conditional upon the previous occurrence of unpleasure is rejected.

Mr. Allen then proceeds to a consideration of the main instincts, in their relation to his subject. The instinct of nutrition is a part of the impulse towards bodily self-maintenance, the endeavour by which a thing attempts to persist in its own being (*conatus in suo esse perseverare*, as Spinoza phrased it). This instinct includes that of reproduction. Sexual intercourse is but the end of one stage in a total conative train, and leads on to the care of offspring and other activities. The paternal instinct may be as primitive as is the maternal. Various subsidiary activities grow up during the course of racial activity; these may come to yield satisfaction in themselves, and apart from the reproductive tendency to which they were, originally, subsidiary. The instinct of curiosity is very interestingly handled; the author holds that there is a primitive mental need to isolate wholes, and to relate such wholes to the remainder of the field of knowledge. Scientific curiosity continues into later life this primitive need to attain, in thought, a control of the outside world. This is, of course, an instance of the operation of the "will to power," which latter is, itself, a necessary outgrowth of the urge towards self-maintenance. Any successful assertion of the self against external force is accompanied by satisfaction, and this satisfaction may come to be valued in itself. The author rejects the view that there is a primitive instinct of submission, as also the view that all kinds of altruistic love are derived from the parental instinct; but he regards gregariousness as a primitive human instinct.

The question arises of the relation of feeling to the instincts. Pleasure does not consist altogether in the attaining of ends by means of unpleasant striving—a view which, when worked out to its conclusion, leads to a pessimistic philosophy. Life may be looked upon as being composed of conative trains, which may be pleasant

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throughout, if they progress normally towards their ends. The great difficulty of the dependence of æsthetic satisfaction upon the result of conation is considered.

To sum up, Mr. Allen maintains that the feelings consist in a "warmth and value," which may be positive or negative, attending upon the success, or failure, of conations. Desire he holds to be primarily the emergence into consciousness of a latent craving for an activity to which the organism is predisposed; later, the value of pleasure may become a subsidiary end. This, of course, necessitates a consideration of the psychology of values. Mr. Allen makes no attempt to lay down an absolute standard of values, nor to discuss whether the concept of absolute value is possible. He contents himself with describing, very adequately, such values as are actually recognized in practice.

It would be unreasonable to expect universal agreement with a book which ranges over so wide a field, and touches upon so many controversial topics. But no reader can fail to be impressed with the impartiality with which the thesis of the book is presented. We congratulate the author upon the production of a lucid, interesting and well-documented volume, a worthy addition to the excellent series of which it forms part. M. HAMBLIN SMITH.

Instinct and Intuition. By GEORGE BINNEY DIBBLEE, M.A. London: Faber & Faber, Ltd., 1929. Medium 8vo. Pp. 394. Price 25*s.* net.

The sub-title of this book describes it as "a study in mental duality"; and the author's contention, put very briefly, is that the form of intelligence whose seat lies in the thalamic region, is much more concerned with feeling than is the other form of intelligence, which receives in the higher region of the cortex all its sensory material already half prepared to undergo the processes of thought and reflection. It is desirable to emphasize the purely human side of instinct, and to avoid the danger of being too ready to draw analogies from the study of animal traits. Intuition is a purely human study.

Mr. Diblee maintains that an independent organ for sensibility exists in the optic thalamus, and that in the end-organ of the thalamus we have an independent cognitive centre, closely associated with emotional effects. It is the primary privilege and power of the faculty of instinct to call for help from, and to set in motion, the superior resources of the intellect; and this power carries with it the capacity to set aside the intellect, to inhibit its working at certain times of stress. In passing from the consideration of instinct to that of intuition we enter a very different realm. The former is obviously animal in its nature, while the latter seems to have no parallel in creatures who are unable to speak. Although other animals possess cerebral hemispheres, we have no evidence that

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they possess counterparts to intuition. The experiments conducted by Head and Rivers receive great attention, but Mr. Dibblee regards the inferences drawn therefrom as being, to some extent, interrupted, or perverted, by the possibility of interference from the cortex.

Nature exhibits many artificial dualities, and these can probably be reduced, thinks Mr. Dibblee, to a single fundamental duality, which must be allied to the physical basis which he has already indicated. But when we come to the duality of thought and feeling we meet with a far more abstruse problem. "This is a real duality which cuts across the physical duality of thalamus and cortex." Mr. Dibblee considers that we may have thalamic thoughts as well as thalamic feelings.

But this only clears the ground for a discussion of the real problem. Assuming that there is a physical duality between the cortical and thalamic systems, are there other and perhaps rival dualities? Are any of these other dualities unconnected with the physical duality? The author considers some of the older "religious" dualities (the term must be distinguished from those philosophic theories known as "dualism"). He rejects the fundamental character of a duality between feeling and thought. He examines the complex problems presented by "double memory." He sees some tendency to duality here, but considers that our present physiological knowledge is too scanty to allow of a final conclusion being drawn. Identity of mind he thinks has been, perhaps, too readily assumed in philosophy.

The conception of the "unconscious self" is then attacked. The author regards this as a question-begging term for the unconscious operation of instinctive and intuitive faculties. He prefers the employment of the adjective "extra-conscious." He gives due attention to the work of the newer school of psychologists, and shows full appreciation of the value of the Freudian hypothesis, but he holds that we should suspend decision until such time as we have more fully investigated the physical basis upon which the observed phenomena depend.

The final conclusion is that the only established and basic duality is that which exists between the cortical and the thalamic systems. There is a fair case for mental duality, from the point of view of introspection. There is a strong case for dual mental centres, presented by the arguments from structure. There is an overwhelming case for dual sensibility, based upon physiology and comparative anatomy.

We have attempted to give a short, although a necessarily inadequate account of the main lines of thought in a book which will be read with intense interest by every student of physiology, psychology or philosophy. But the "plain man," could we imagine such a person reading the book, might ask what is the practical bearing of it all. Is not the whole question merely one of verbal hair-splitting? The "plain man" would be wrong, as he so often is. The author's original interest appears to have lain in the eminently "practical" field of economics. He was led to

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undertake the present inquiry into the natures of instinct and intuition, because he had been brought to a stop in his researches on the economic side. Economic life is governed by the laws of supply and demand; demand depends entirely upon value, and the latter is a subject which is not only psychological, but reaches also into the domain of philosophy. M. HAMBLIN SMITH.

The Care of Psychopaths in Rio de Janeiro (*Assistencia a psychopathas no Rio de Janeiro*). By Prof. JULIANO MOREIRA. Buenos Aires, 1927. Pp. 8.

Notes on Nervous and Mental Diseases in Brazil (*Algo sobre doenças nervosas e mentaes no Brasil*). Same author. 1929. Pp. 14.

We have much pleasure in noticing these two publications. The first is a reprint of the author's contribution to a congratulatory volume presented, by friends and colleagues, to Dr. Domingo Cabred. A sketch is given of the gradual development of our specialty in Brazil. During the "colonial" period in that country, the treatment of insane persons depended upon the amount of property possessed by the patient. Rich patients were often treated in their homes, or were sent back to Portugal. The poor wandered about the country, precariously supported by charity. If, however, they were violent, they were confined in prisons, often in chains. Therapy consisted of venesection and "setons," reinforced by religious exorcisms. The establishment of Brazilian independence, in 1822, was followed by much immigration from various European countries, by a great development in city life, and by an increase in luxury, which later was accompanied by a larger consumption of alcohol. It is not surprising to learn that an increase in the incidence of mental disorders was observed. An agitation by members of the medical profession produced a trend in public opinion towards reform, and the various steps in the reforming process are detailed. It is interesting to note that a start was made about 1854 in the direction of occupational therapy; and the first mental hospital band, comprising four instrumentalists, was originated at that date. The gradual changes made in the law are described. Treatment is provided for all psychopathic cases, and is not confined to the "alienated" patient. The institutions, are of varying types, and would appear to be adequately staffed, although we are not told the number of patients with which the staffs have to deal. Surgery, ophthalmology, dentistry and other special forms of treatment are provided for, and insane criminals have been removed from the prisons. It is pleasing to note that out-patient departments are provided for the treatment of suitable cases.

The second publication is a reprint of a lecture given by Prof. Moreira to the University of Hamburg. The writer gives a brief account of Brazil, mentioning its vast size, and the varying

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climatic conditions which are met with. He also notices the heterogeneous character of the population, which consists of immigrants, and their descendants, from many nations. He does not consider that temperature conditions have any determining influence upon the insanity-rate for the various districts. The ethnological factor, however, is of much importance. Much depends upon the degree in which persons of different racial stocks retain their special characteristics, and races vary greatly in this respect. He believes that the British stock is the most resistant to foreign influences, and he contrasts them, in this connection, with the purely Teutonic races. As regards "intelligence," as measured by the Terman and similar scales, he does not think that there is much racial difference to be found. Subjects who have been reared in country districts may tend to grade low; but they often do quite well when brought under the conditions of city life. This has, of course, been noted by other observers.

It has been said that Europe has more to learn from America than America has to learn from Europe. So far as our own country and South America are concerned, we think that this statement contains an element of truth. Much good work is published on psychiatry in the South American countries, but this work is deplorably little known to British psychiatrists. We have recently had the pleasure of reviewing some of this work in these columns, and we venture to hope that this may prove to be but the first step in a wider interchange of views between ourselves and our fellow-workers in South America. M. HAMBLIN SMITH.

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Part III.—Epitome of Current Literature.

1. Neurology.

The Development of the Plantar Reflex in Children. (*Arch. of Neur. and Psychiat., April,* 1930.) *Waggoner, R. W., and Ferguson, W. G.*

The authors found that the intensity of the stimulus is very important: if the stimulus is too strong, there is apt to be a reversal of the reaction to flexion because the reflex becomes a nociceptive one. In many cases there may be a reversal of the type of reaction as the subject passes from the sleeping to the waking state. The foot should be warm and the muscles relaxed as much as possible. The plantar reactions are variable during the first few days, but with the proper stimulus pure extension predominates. Extension of the great toe with flexion of the others is much more frequent than pure flexion. At six months extension of the great toe with flexion of the others is predominant, whilst pure flexion and pure extension about equal one another. At one year the reaction has become almost entirely the adult one of flexion. The change from the one type of reaction to the other is gradual.

G. W. T. H. Fleming.

Sleep as a Problem of Localization. (*Journ. of Nerv. and Ment. Dis., March,* 1930.) *Von Economo, C.*

Von Economo, after reviewing the theories of sleep put forward by various authors, states his own conclusions. He calls attention to the fact that in epidemic encephalitis *sopor* is most commonly associated with paralysis of eye muscles, especially with ptosis. This indicates a lesion of the most frontal part of the nucleus oculomotorius, so he places the posterior border of the centre for sleep regulation immediately in front of the nuclei of the eye muscles, in the grey junction of interbrain and thalamus, where the aqueduct of Sylvius opens into the third ventricle. The anterior part of the centre may be located further frontally in the grey walls of the third ventricle near the head of the caudate nucleus. The author thinks that the "centre" is spread over the posterior and lateral walls of the third ventricle, reaching laterally into the hypothalamus. He also points out that Hess of Zurich has succeeded in making cats fall asleep, with all the symptoms of fatigue, yawning and position of rest by electrical stimulation, using very

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fine electrodes and very weak currents, of the anterior region of the aqueduct and the posterior wall of the third ventricle.

G. W. T. H. FLEMING.

Hepato-lenticular Degeneration. (*Arch. of Neur. and Psychiat., April*, 1930.) *Lhermette, J., and Muncie, W. S.*

The authors describe three cases of hypertrophic cirrhosis of the liver in patients aged 32, 38 and 22 years, accompanied by splenomegaly, deficient liver function and by few or no neurological signs. Two patients died, after a short illness, of the liver disease. The third survived, and, at the time of writing showed little evidence of deficient liver function and had a typical Kayser-Fleischer corneal zone. Apparently in the first two cases death occurred too soon for either corneal or cerebral signs to make their appearance.

G. W. T. H. FLEMING.

Studies in Epilepsy. (*Arch. of Neur. and Psychiat., March*, 1930.) *Lennox, W. G., and Allen, M. B.*

IX. The Sugar Content of the Spinal Fluid.

In 113 patients with epilepsy the ratio of the sugar content of the spinal fluid to that of the blood was normal.

X. The Chloride Content of the Blood and Spinal Fluid.

Simultaneous measurements were made of the chloride in the blood and in the spinal fluid in 120 patients subject to epilepsy. The average value for chloride in the blood and the spinal fluid and the ratio of chloride in the spinal fluid to that in the blood were within normal limits.

G. W. T. H. FLEMING.

Allergy as Cause of Epileptiform Convulsions. (*Arch. of Neur. and Psychiat., February*, 1930.) *Waldbott, G. L.*

The author describes two cases in young children in which epileptiform attacks took the place of asthmatic attacks. He considers that the epileptic attacks were allergic in nature.

G. W. T. H. FLEMING.

Epileptic Manifestations in Chronic Epidemic Encephalitis. (*Journ. of Nerv. and Ment. Dis., January*, 1930.) *Notkin, J.*

The author points out the rarity of this condition after epidemic encephalitis, reviews the existing literature on the subject and reports a case from his own experience. He thinks that in the acute or chronic stage the encephalitic process may interfere with the circulation and in this way produce a seizure. The rarity of seizures in epidemic encephalitis the author assumes to be due to the fact that the convulsibility or liability to convulsions varies in different individuals, and that only those with a low threshold respond.

G. W. T. H. FLEMING.

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2. Psychology and Psycho-Pathology.

A Quantitative Consideration of the Purkinjë Phenomenon. (*Amer. Journ. of Psych., October*, 1929.) *Forbes, W. T. M.*

It is well known that the relative brightness of the various colours of the spectrum at constant energy varies with the brightness of the light stimulus to which the eye is adapted. An attempt is here made to derive from the available data the law of this variation, so that it will be possible to correct for the varying brightnesses under which experiments on colour have been made. Complete success is not claimed, but the author believes that his co-efficients approximate to the true values. A. WOHLGEMUTH.

Whole and Part Methods with Non-serial Reactions. (*Amer. Journ. of Psych., October*, 1992.) *Crafts, L. W.*

The purpose of the experiment was to compare the efficiency of the whole and of three types of part method for learning certain non-serial reactions, namely, those involved in two types of card-sorting, one simple, the other relatively complex. The criteria of efficiency were (*a*) the sorting speed attained over some given trial with the "whole," *i.e.*, with all the cards and compartments used; and (*b*) the amount of practice time required to attain some given speed therewith. According to both criteria the whole method was in general superior to the various part methods. These differences were greater and more consistent for the complex than for the simple card sorting. The fact that all the part methods were definitely inferior for learning card sorting under the given experimental conditions indicates: (1) That the crucial reason for the inferiority of a part method need not in all cases reside in the matter of serial connections; (2) that a combination or progressive part method is not necessarily superior to a whole method, even in the field of motor learning; and (3) that in consequence existing generalizations to this effect stand in need of qualification. A. WOHLGEMUTH.

The Relative Rôles of the Temporal and the Intensive Factors in Sound Localization. (*Amer. Journ. of Psych., October*, 1929.) *Trimble, O. C.*

The results seem to indicate (1) that, while both time and in tensity as physical variants condition localization, these factors do not function in the same manner as conditions of auditory stimulation; and (2) that intensity may be the more effective factor in determining directional perception in auditory space. These results may be interpreted as supporting the intensity theory of sound localization; but whether intensity is the main determining factor throughout the entire (frequency) range of auditory stimuli remains

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to be demonstrated. The results cannot be considered as supporting the phase-time-intensity theory, because each factor, when the others were controlled, was found to condition its normal effect with high-pitched sounds used as stimuli.

A. WOHLGEMUTH.

The Relation of Heterogeneous and Homogeneous Chromatic Stimuli in the Range of Visual Apprehension Experiment. (*Amer. Journ. of Psych., October*, 1929.) *Brown, A. F.*

This investigation is a continuation of the series of studies in the "range of visual apprehension" initiated by Fernberger's study in 1921, who held that the classical "range of attention" experiment is not a problem of attention, but rather one of apprehension. The experiments were conducted with coloured dots. If the judgments were characterized as "immediate" by the observer they were classified under "unit" apprehension; these data, together with those based on judgments characterized as "grouped," were classified under "group" apprehension, and these two, together with those characterized as "counted," were classified under "mediate apprehension." These three "conscious patterns" correspond to Oberly's "attention," "cognition," and "apprehension." The following are the more important results: The value of the limina increases from unit apprehension towards mediate apprehension. Heterogeneity of chromatic stimuli tends to reduce the magnitude of the limina for each of the three cognitive patterns, least for "unit" and most for "mediate" apprehension. The category "immediate" appeared to be least equivocal, that of "counted" medially so, and that of "grouped" most equivocal. Practice greatly influenced the results towards the end.

A. WOHLGEMUTH.

Eye Movements and the Phi-phenomenon. (*Amer. Journ. of Psych., October*, 1929.) *Guilford, J. P.*

In this paper are reported the results of some experiments in which eye movements were photographed during the phi-phenomenon. No correlation whatever was found between eye movements and the occurrence of apparent movement. If anything, eye movements interfere with good phenomenal movement from two successive stationary stimuli. A. WOHLGEMUTH.

Some Conditions of Perception of Visible Movement. (*Amer. Journ. of Psych., October*, 1929.) *Dimmick, F. L., and Sanders, R. W.*

From their results and their relation to those of other investigators the authors contend that the term "visual movement" is not adequately definitive either of a single mental phenomenon or of a single perceptual pattern. They suggest tentatively the terms "visible movement," "apprehended movement," and "inferred movement." A. WOHLGEMUTH.

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An Experiment on Affective Contrast. (*Amer. Journ. of Psych., October*, 1929.) *Harris, A. J.*

This experiment was carried on with four observers and series of coloured papers. Out of a set of 90 Milton-Bradley coloured papers each observer had to choose the ten most pleasant and the ten most unpleasant colours. Out of the 41 colours left untouched by all the observers 20 were selected by the experimenter as a test series. This test series was presented to the observers after the pleasant or the unpleasant colours respectively, and the influence of the preceding colours on the test-series noted. The author states that there is no demonstrable individual contrast effect. However, the value of the test-series is higher when an unpleasant series of stimuli is interpolated, and the amount of shift is proportional to the difference between the determining series. He calls this a "mass contrast" effect, and considers it to be adequately described by Beebe-Center's law of affective equilibrium: "The affective value of the experimental correlate of a stimulus varies conversely with the sum of the affective values of those experiences preceding this correlate which constitute with it a unitary temporal group."

The experimental technique is, however, not as carefully arranged as it might have been, and sufficient notice has not been taken of other work on pleasure-unpleasure. The affective processes are not as simple as the author too lightly assumes.

A. WOHLGEMUTH.

Variations towards Purple in the Visual After-image. (*Amer. Journ. of Psych., October*, 1929.) *Karwoski, Th.*

The colour of the after-image is specifically correlated with the brightness of the light simultaneously fatiguing the retina. Thus the after-image is complementary in hue only under particular circumstances. It is not more characteristic of the stimulus than is the purplish effect which is due to the same light under different intensities. A complementary hue is favoured by medium intensity of the stimulus and reacting field; a purple hue is consequent on the higher intensities.

A. WOHLGEMUTH.

Internationale Zeitschrift für Individual-Psychologie, March–April, 1930. *Herausgegeben von Dr. Alfred Adler.*

This number contains the following papers:

Once More—The Unity of the Neuroses [*Nochmals—die Einheit der Neurosen*]. *Adler, A.*

Adler, once more, defends his view that in the classification of the neuroses there are no opposites, all neuroses being merely variants of organ-inferiority (including inferiority of the endocrine glands) and want of adaptation of the individual to his surroundings. He illustrates his view by a lengthy history of a case of melancholia which had lasted for eight years.

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Confession (*Bekenntnis*). *On the Occasion of Adler's Sixtieth Birthday. Löwy, I.*

A grateful avowal of the writer's indebtedness to individual psychology and to Adler personally.

Alfred Adler—Sixty [*Alfred Adler 60 Jahre*]. *Holub, A.*

Goal and Means to the Knowledge of Human Nature [*Ziel und Weg der Menschenkenntnis*]. *Oppenheim, D. E.*

Alfred Adler, the Physician [*Alfred Adler, der Arzt*]. *Wexberg, Erwin.*

Reports of orations on the occasion of Adler's sixtieth birthday.

The Position of the Child in the Family [*Die Stellung des Kindes in der Familie*]. *Knopf, O.*

A statistical report of the cases (87) treated during the first two months of the existence of the individual psychological clinic of Columbia University (Vanderbilt Clinic).

Alleged Spook Phenomena and their Individual Psychological Interpretation [*Angebliche Spukphänomene und ihre individual-psychologische Deutung*]. *Kalmann, H.*

Contribution to the Theory of Ability and Vocational Tests [*Zur Theorie der Begabungs- und Eignungsprüfungen*]. *Liebmann, S.*

The tasks of tests cannot be merely to ascertain the intelligence, or other qualities independent of it. What has to be investigated is what these qualities signify within the total personality of the individual, how they influence his behaviour, whether an unfavourable character-trait—some want of ability, for instance—is neutralized or even over-compensated by other favourable traits.

Myth and Complex [*Mythos und Komplex*]. *Lazarsfeld, R.*

Individual psychological speculations on "the fall of man"—the third chapter of Genesis. A. WOHLGEMUTH.

Psyche, No. 39, *January*, 1930.

This number contains the following articles :

Editorial, 28 pp. on, "Basic English."

Opposition, Logical, Psychological and Orthological. Adelyne More. 24 pp.

A Speaking-Vocabulary in a Foreign Language. West, M. 12 pp.

The author discusses the unsatisfactory way in which foreign languages have been taught hitherto, emphasizing especially the learning of words that are of little use to the pupil.

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Organ-States and Emotional Correlatives. Crookshank, F. G. 16 pp.

An advocacy of Adler's individual psychology.

Typological Methods in Experimental Psychology. Oeser, O.

This interesting paper discusses the various schools of psychology and their different methods of investigation. It then enlarges upon the experimental investigations and points out the contradictory results obtained by different investigators, choosing, as an example, researches on reading. The author points out that such divergencies are due not only to different experimental methods, *e.g.*, modified apparatus, etc., but also to difference in instructions given to, and the resulting attitude of, the observers, as well as the influence of the experimenter. These differences alone, however, do not explain the widely divergent results of the same experimenter with different observers, which can only be explained by different types. This point he argues fairly conclusively; favours E. Jaensch's typology, and avows himself an adherent of the Marburg School.

The Encouragement of Invention.

This is an Interim Report prepared by the Scientific Research Committee of the Orthological Institute under the direction of Dr. H. Stafford Hatfield, and criticizes the existing patent laws, suggesting desirable alterations. A. WOHLGEMUTH.

The Effect of Practice upon the Upper Limen for Tonal Discrimination. (*Amer. Journ. of Psych., January*, 1930.) *Humes, J. F.*

The purpose of this study was to discover whether practice affected the upper terminal limen for tone, and if so, how. The apparatus consisted of a set of 40 steel cylinders of the Koenig type, ranging from 16,200 to 24,000 d.v. by increments of 200 d.v. There were six observers, all members of the staff of the Department of Psychology of the University of Pennsylvania, but only four completed the series of experiments. It might be expected that practice would increase the magnitude of the upper terminal limen, but the curves reveal no such result; on the contrary, in the case of two of the observers there was a distinct decrease in this value. A. WOHLGEMUTH.

Studies in Affective Psychology. (*Amer. Journ. of Psych., January*, 1930.) *Young, P. T.*

The original aim of this study, the author tells us, was to work out a technique for testing affective reactions. He hoped to develop norms of like and dislike similar, perhaps, to the word-association norms of Kent and Rosanoff, but owing to difficulties with the method this aim was not attained. He concludes that the scale-of-values method may yield statistically uniform results, whose interpretations are doubtful because (*a*) the affective judgment

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is equivocal regarding the existence of felt experience, and (*b*) the subject's attitude towards the scale is a factor determining judgment. Our author is evidently discouraged. "Looking back," he says, "over the studies, one principle stands out prominently—the relativism of facts of observation to methods and postulates. . . . The only fair conclusion is that the facts of affective psychology are largely *made* before experimentation is commenced, *made* by the training, education, theoretical views of the subjects. The faith of the physical scientist that there are facts of observation independent of the observer is not valid. It is shattered by the finding that to a great extent facts of observations may be made to order. One can train a group of observers to report A = B and another group to report A ≠ B."

But all this is ancient history. The psychologist is, after all, only human, and therefore as susceptible to suggestion as the patient of the psycho-analyst. Only, whilst suggestion is rampant, palpable, stodgy and indispensable in the psycho-analytical consulting-room, it is tenuous, elusive and insidious in the psychological laboratory. However, suggestion can largely be avoided by proper training, and the outlook in affective psychology is not everywhere as black as Young sees it.

A. WOHLGEMUTH.

Physical Asymmetries and Disorientation. (*Amer. Journ. of Psych., January*, 1930.) *Lund, F. H.*

A football field with a fairly even and uniform surface of green turf was mapped out. The subject had to walk blindfolded from the starting-point in a bee-line to a point he was shown before being blindfolded. The experimenter walked behind, marking on a chart the course pursued. 125 subjects, students of psychology, participated in the experiment. The author concludes that the exclusion of the visual sense, which usually guides spatial adjustments, results in varying amounts of disorientation, expressing itself in a disposition to veer or in a disparity between actual or intended movement. The blindfolded subject attempting to walk in a straight line generally veers to the right or to the left. The direction of the veering is hardly a chance matter, since under the same conditions the same subject tends to veer in the same direction in successive trials. This consistent veering to one side may be regarded as a case of functional dominance of the opposite side of the body.

A. WOHLGEMUTH.

The Analysis and Synthesis of Burning Heat. (*Amer. Journ. of Psych., January*, 1930.) *Ferrall, S. C., and Dallenbach, K. M.*

The object of this investigation was to describe the experience of burning heat. There were two problems, *viz.*, (1) the analytic problem, *i.e.*, the determination by introspective analysis of the qualities involved in the experience; (2) the synthetic problem, *i.e.*, the synthesizing of the experience. The results were as follows:

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(1) The limen for heat, *i.e.*, the point where paradoxical cold is aroused, varies for different observers; (2) the experience of heat, aroused by stimuli that are separately adequate only to induce warmth or cold, is a unique quality lying in the pressure-prick-pain continuum, closer to pressure than to pain; (3) burning heat is predominantly a pricking, stinging, painful experience which may be aroused synthetically by stimuli that singly are adequate only to warmth, cold, or pain (a real sting); (4) the ultimate nature of the experience of burning heat, *i.e.*, whether it is a *Mischempfindung* or a unique quality, remains still undecided. A. WOHLGEMUTH.

A Comparative Study of Voluntary and Hypnotic Catalepsy. (*Amer. Journ. of Psych., January*, 1930.) *Williams, G. W.*

The following conclusions, says the author, seem to be warranted by the data presented in this study: (1) There is a failure to report feelings of pain during the making of the trance records, which is not due to any suggestion given by the experimenter. The question of the relation of feelings of pain to work accomplished was, however, not specifically studied in this experiment. (2) The subjects of this experiment were unable to hold up their arms any longer in the trance than in the waking state. (3) There is possibly an increase in the amount of oscillation in the normal state, as compared with that in the trance state, after the first three minutes of experimentation. (4) The characteristic curve of the falling of the arm shows slight negative acceleration, and that of the amount of oscillation a more clearly emphasized positive acceleration.

The procedure in the preliminary preparations to the experiments is described thus: The subjects were put into the trance by making them look into one of the experimenter's eyes. Verbal suggestions of being in a deep trance were also used when the subject's eyes had closed. Cataleptic rigidity of the arm was induced by verbal suggestions that the arm was becoming stiff and rigid; the arm was simultaneously lifted to the level of the shoulder by the experimenter and connected to the recording apparatus. In the normal state the arm was similarly lifted, but without the repeated suggestion of catalepsy. A voluntary catalepsy was induced by giving the single instruction, "Hold your arm there rigidly." This instruction was also given after the arm had been lifted in the trance cataleptic state. This was the only instruction given, so that conditions were identical in the two experiments.

We see that we are vouchsafed no information as to the criterion which enabled the experimenter to judge whether voluntary or hypnotic trance states had been obtained. With regular and much-used subjects it is more than probable that they were more or less in a hypnotic trance state in every one of the experiments. Again, with subjects who were new to hypnotic procedure we have no proof whatever that a trance state had been induced, either voluntarily or by suggestion. It is therefore impossible to assess the value of the above conclusions. A. WOHLGEMUTH.

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Congenital Auditory Imperception (Congenital Word-Deafness) and its Relation to Idioglossia and Other Speech Defects. (*Journ. of Neur. and Psychopath., January*, 1930.) *Worster-Drought, C., and Allen, I. M.*

The authors survey the problem and discuss the various cases. The condition is more common in boys than girls; there is a familial factor in about one-third of the cases. The clinical features are an inability to appreciate the significance of spoken words and slight defects in the appreciation of written words, and spelling resembling those in speech. Hearing and other functions are perfectly normal. The condition would appear to be due to absence or defective development of the parts of the brain concerned in auditory reception, the changes being bilateral in distribution. The type of aphasia corresponds to Head's verbal aphasia. Children suffering from the defect are potentially normal mentally, but because of their difficulty in understanding speech and their inability to express themselves may be thought to be mentally defective. They may become imbeciles from deprivation.

G. W. T. H. Fleming.

The Schizophrenic Maladjustment. (*Journ. of Neurol. and Psychopath, January*, 1930.) *Macfie Campbell, C.*

The author sees in the schizophrenic process a reaction to a life situation which has become intolerable to the patient. The study of the ætiology of a schizophrenic psychosis stretches far back to the childhood of the patient. Situations and experiences in early life have to be carefully considered. G. W. T. H. Fleming.

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3. Clinical Psychiatry.

Manic-Depressive Psychosis in Private Practice; Length of the Attack and Length of the Interval. (*Arch. of Neur. and Psychiat., April*, 1930.) *Paskind, H. A.*

The author, from a consideration of the length of attack in 444 attacks and 438 intervals in patients in private practice, concluded that the attacks occurring in non-institutional cases were much shorter and the intervals much longer than in institution cases. The median value for the duration of the attack was four months. Attacks in females are longer than those in males in the ratio of 4 : 3. The attacks become longer, not in relation to their sequence, but in relation to the age at which they occur. The median value for the intervals for the series was seven years. For the first interval the median value was eight years, for the second five years, and for the third or subsequent intervals four years.

G. W. T. H. Fleming

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Osteomalacia in a Psychotic Subject [*Osteomalacia in Psicopatica*]. (*Rivista Sperimentale di Freniatria, March,* 1930.) *Pighini, O.*

The author describes in detail the history, progress and *post-mortem* findings in a manic-depressive subject who developed progressive osteomalacia, affecting chiefly the cervical and dorsal spine and the thoracic wall while sparing the head. This condition was associated with thyroid enlargement and signs of hyperthyroidism. Progressive muscular and mental enfeeblement led ultimately to extreme wasting and emaciation and profound dementia. Nine years elapsed between the onset of osteomalacia at 57 and the patient's death.

The *post-mortem* findings included: characteristic changes of osteomalacia; cerebral, renal and cardiac arterio-sclerosis; enlargement of the dendrites of the small pyramidal cells of the cortex; proliferation of the chromophobe cells of the anterior part of the pituitary; disseminated fibro-adenomatous changes in the thyroid; hypertrophy and hyperplasia of the parathyroids; hypoplasia of the suprarenal medulla, with signs of diminished activity of the suprarenal cortex.

The author discusses the occurrence of this condition in the psychoses in general and in dementia præcox in particular, and mentions the association of the latter with Graves' disease or myxœdema. He suggests that the organic disturbances which determined the onset of osteomalacia occurred in three stages: Firstly, the renal and perhaps the suprarenal changes led to alteration in the acid-base equilibrium. Further degeneration of the kidneys contributed to the intoxication and interfered with calcium metabolism. Secondly, the alteration in the calcium metabolism led to the onset of osteomalacia. Thirdly, the thyroid and parathyroid hypertrophy were secondary to these abnormal conditions.

H. W. Eddison.

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4. Pathology.

Experimental Allergy in the Insane: Its Clinical Value [*L'allergia Genetica Sperimentale Negli Alienati e suo Valore Clinico*]. (*Rivista Sperimentale di Freniatria, March,* 1930.) *De Nigris.*

The author calls attention to the value of a cutaneous reaction produced by extracts of the sex-glands. The technique is that of von Pirquet and the reaction occurs in ten to fifteen minutes.

The frequency with which the reaction is met and its intensity are in direct proportion to the degree of activity of the sex-glands of the individual. The reaction is indicative of an allergic state, which appears at puberty, reaches its maximum at an age which differs in individuals and declines as age advances. It is absent in exhausting diseases and anergic conditions in general. Women are anallergic during the early puerperium. Its presence or

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absence in psychotic cases is dependent, not upon the cause, but upon the form of the mental disorder.

The reaction is absent in general paralysis, encephalitis lethargica, epilepsy, high degrees of idiocy and melancholia. In maniacal states, on the other hand, an allergic state is present. Anallergy goes with depression, allergy with excitement. An experimental allergic state may be obtained by the administration of extracts of sex-glands to anallergic patients. He describes the effect of opotherapy by means of extracts of sex-glands upon the cutaneous reaction in a number of selected cases. H. W. EDDISON.

The Investigation of Liver Function in Confusional Insanity and in Dementia Præcox. (*Riv. di Pat. Nerv. e Ment.*, 1930.) *Gullotta, S.*

The author investigated twelve cases of confusional insanity and twenty-five cases of dementia præcox. The tests of liver function used were the rose bengal of Fiessinger and Walter and the examination of the blood and urine for abnormal aromatic substances.

In all twelve cases of confusion there was in the blood an increase in the amount of retention of rose bengal, an "aromatæmia" characterized by a positive reaction to the tests of Machold and of Andrens, a positive xanthoproteic reaction, an increase in the indirect Van den Bergh reaction, a normal value for bilirubin by the method of Harzfeld, and an absence of urobilin.

In the urine the reaction of Buscaino was always black, indican, scatole and urorosein were all present, and the reaction of Milton in the cold was positive. In some cases there was also a positive diazo-reaction of Ehrlich and of Weiss, and a decrease in the surface tension depending on an increase of oxyproteic acid rather than of the biliary acids. There was no bilirubin and no hæmatin.

The author divides his twenty-five cases of dementia præcox into two groups: (*a*) Those of recent origin or with an exacerbation (nine cases). These showed the same changes as the confusional cases. In the other group (*b*) of old-standing cases the above-mentioned reactions were always negative, there were hypobilirubinæmia, increase in osmotic resistance of the erythrocytes and urobilinuria. Gullotta considers that his results confirm Buscaino's theory of the toxic origin of these disorders.

G. W. T. H. FLEMING.

The Presence of Bilirubinæmia in Confusional Insanity and other Mental Disorders. (*Riv. di. Pat. Nerv. e. Ment., March*, 1930.) *Ugurgieri, C.*

The author made qualitative and quantitative estimations of bilirubin in the blood-serum of 172 cases by Van den Bergh's method. He also examined the red-cell fragility and, in the urine, the presence of urobilinogen and urobilin. In confusional insanity 100% of cases showed an increase of bilirubin in the serum, the increase running parallel with the severity of the bodily and confusional

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symptoms. Confusional insanity and early dementia præcox show a similar behaviour with regard to the bilirubinæmia. The author attributes the bilirubinæmia to a lesion of the hepatic cells and not to any hæmolytic factors, and considers that it is of prognostic significance in confusional insanity. G. W. T. H. FLEMING.

On Bromide Intoxication. (*Journ. of Nerv. and Ment. Dis., February and March*, 1930.) *Diethelm, O.*

Diethelm points out that during bromide administration a balance occurs in the blood between the chloride and the bromide, the latter displacing some of the former. Ulrich had pointed out that we should guard against a replacement of more than 30% of the chlorides by bromide. Cases of bromide intoxication were treated by the author with sodium chloride and forced fluid. Patients vary greatly in the extent to which they can tolerate bromide. Kidney and heart disturbances lower the resistance to bromide. Of the author's admissions 40% had taken bromide, but only 2% showed toxic symptoms. Most cases in the literature are not pure reaction to the drug, but are complicated by existing psychoses.
G. W. T. H. FLEMING.

Studies on the Pathogenesis of Multiple Sclerosis. (*Arch. of Neur. and Psychiat., April*, 1930.) *Brickner, R. M.*

The author used seventeen cases of multiple sclerosis for his experiments. These consisted of noting the myelinolytic effect of blood from these patients on the spinal cords of rats. The cords were examined after they had been in contact with the blood for one day. The most marked changes found were: (1) A general disarrangement and disorganization of the pattern made by the myelin sheaths as they appear in cross-section; (2) swelling of the myelin sheath, giving the appearance of large unstained lacunæ; (3) thickening of the sheath, with increased density of the stain by the Weigert-Pal method; (4) running together of myelin from different sheaths so that dense black mattings were seen; (5) fragmentation of sheaths; (6) great variation in size of sheath; (7) formation of scattered globules which still stained black by the Weigert-Pal method; (8) in no case was there severe damage of every sheath; the degree of change varied from sheath to sheath, and often entirely normal-looking ones were encountered. Most of the myelin still stains by the Weigert-Pal method, even after forty-eight hours. The Marchi method is not strongly positive at twenty-four hours. The peripheral half of the white matter is damaged to a greater extent than the central half. The cords immersed in normal plasma were damaged to a certain extent. The greatest changes occurred in the sheaths of the white column fibres; next came the fine fibres that go across the ventral part of the grey matter, and last the ventral nerve-rootlets and nerves themselves. The nature of the myelinolytic agent is unknown. The author also investigated two cases of post-encephalitic paralysis, one of amyotrophic lateral

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sclerosis and one of pernicious anæmia with changes in the spinal cord, but found no similar alterations. He does not recommend the test as at present of any diagnostic value. He thinks that the agent responsible for the myelinolysis may be a lipase and, as quinine is known to be an inactivator of certain blood lipases, he suggests giving quinine as treatment. Five out of eight patients treated with quinine entered a remission within ten to fourteen days. G. W. T. H. FLEMING.

The Nature of Von Recklinghausen's Disease and the Tumour Associated with it. (*Arch. of Neur. and Psychiat., February,* 1930.) *Penfield, W., and Young, A. W.*

In the multiple tumours found in this condition the nature of the tumour is that peculiar to the tissues, meninges and central nervous system or nerve-trunks, and is the same as is met with in other circumstances. In all these tissues areas of hyperplasia occur. The thickening of nerve-trunks is due to a perineuronal hyperplasia of the connective tissue about the nerve-fibres. These are neurofibromata. In some cases there may be a true neoplastic tissue of fibroblasts forming a perineural fibroblastoma. The flat wart-like pigmented patches on the under-surface of the dura are composed of hyperplastic arachnoidal cells. In the central nervous system there are scattered patches of gliosis containing typical reacting astrocytes of adult type. There are also patches of ependymal hyperplasia. The fibres in the neurofibromata are reticulin fibres, those in the astrocytomata are neuroglia fibres, and can be differentiated by means of Mallory's phosphotungstic acid stain. In every case the type cell of the neoplasm is not nervous in origin. G. W. T. H. FLEMING.

The Reaction of the Brain-Tissue to Intravenous Injection of Hypotonic Solutions. (*Journ. of Nerv. and Ment. Dis., February,* 1930.) *Ferrara, A.*

The author used repeated and abundant intravenous injections of hypotonic solution and found a marked hydration of the brain-tissue. The choroid plexuses were vacuolated and the ependymal lining-cells of the ventricles shrunken. The perivascular and perineuronal spaces were markedly dilated, with some predilection for the internal layers of the cortex in general and of Ammon's horn in particular. The neurones show vacuolation of the cytoplasm, swelling of the nucleus and eventually complete liquefaction. The axons are also involved, especially in their myelin component. The neuroglia cells, especially in the sub-ependymal layers, may show clasmatodendrosis and their processes may appear unusually tortuous. Microglia and oligodendroglia show acute swelling, the neuroglia also showing clasmatodendrosis. The small blood-vessels react in the most severe instances by a pronounced swelling of the lining epithelium of the intima. G. W. T. H. FLEMING.

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A Contribution to the Pathology of the Later Manifestations of Encephalitis Lethargica. (*Journ. of Neur. and Psychopath., January*, 1930.) *Reynolds, F. E., and Slater, J. K.*

The authors investigated the brain of a case in which the acute attack had taken place eight years previously, with subsequent progressive Parkinsonianism. The mid-brain was selected for examination, as the symptoms indicated that a definite focus of damage had occurred in and around the nuclei of the third cranial nerve. Throughout the mid-brain there were areas present in which great proliferation of astrocytes had occurred. There were also areas of dense gliosis. Some large astrocytes were present with thick processes and nuclei rich in chromatin. Throughout the areas of gliosis some of the large vegetative astrocytes occurred in pairs and small groups. These astrocytic changes were active up to the time of death, showing that the disease process itself was active and progressive to the end.

G. W. T. H. FLEMING.

Muscle Tone in Parkinsonian States. (*Arch. of Neur. and Psychiat., February*, 1930.) *Pollock, L. J., and Davis, L.*

Parkinsonian rigidity is dependent on the integrity of the proprioceptive reflex arc and disappears when the posterior roots are cut. In decerebrate animals, atropine diminishes that part of the rigidity which is dependent on the muscle proprioceptive reflexes.

G. W. T. H. FLEMING.

Paralytic Dementia: The Localization of the Spirochæta pallida in the Brain. (*Arch. of Neur. and Psychiat., March*, 1930.) *Aars, C. G.*

The author examined the brains of thirteen well-defined cases of paresis and three of cerebral syphilis. Using Jahnel's method he found spirochætes in nine out of the thirteen paretic brains. He did not find them in the medulla oblongata, pons or cerebellum, or in the meninges. He found most of them in the fourth, fifth and sixth cell layers in the cortex. His results do not support the intravascular or intracellular localization of spirochætes.

G. W. T. H. FLEMING.

Vaccination with Syphilis [*Estudio sobre la vacunación tisular en la sífilis experimental*]. (*Soc. de Biol., April* 20, 1929.) *Levaditi, C., and Lépine, P.*

The authors state that the intra-scrotal or intra-testicular injection of spirochætes which have lost their vitality by heating at 55°, does not result in a local refractory state, nor does the serum respond to the flocculation test (reaction of Meinicke). The procedure confers no immunity, as the animals develop a syphiloma after the injection of the living virus.

Intravenously, however, the injection of dead spirochætes is followed by a definitely positive flocculation reaction.

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The authors consider that the reaction does not imply, strongly, the existence of a condition of infection or a state of immunity. The syphilitic antibodies should not be identified with the substances responsible for the flocculation in Meinicke's test.

J. R. BEITH ROBB.

Malaria and the Wassermann Test [*La funcion reactivadora de la Malaria*]. (*Arch. Brasileiros de Med., No.* 8, *August,* 1928.) *Pires, W., and Póvoa, H.*

The authors made a study of the effects of protein therapy and of various infections on the Wassermann reaction. Observations were made in the following cases in which the Wassermann reaction had become negative: syphilis 10, tabes 4, cerebral syphilis 2, endarteritis 2, epilepsy 1, optic atrophy 1. After malarial inoculation, however, the Wassermann again became positive.

They consider that although malaria may be deadly to the spirochæte, there are cases in which the action is irritative.

This they offer as the explanation of the secondary cutaneous manifestations sometimes observed during malaria therapy (Herxheimer's phenomenon).

J. R. BEITH ROBB.

Morphological Changes in the Endocrine Glands in Mongolian Idiocy, with Report of Two Cases. (*Endocrinology, Jan.–Feb.*, 1930, *p.* 1.) *Gordon, Murray B.*

A brief review of the scant literature on this subject shows that the pathological alterations reported in the endocrine glands in mongolian idiocy are inconstant and have given rise to contradictory interpretations. Gordon reports the histo-pathological changes in the endocrine glands of two mongolian idiots.

In the first, æt. 14 months, the changes consisted of cirrhosis and dysfunction of the thyroid gland, physiological involution of the adrenal cortex with hypoplasia of the chromaffin substance, a normal pineal except for the presence of a cyst lined by glia-cells, and normal pituitary and ovary.

The second, æt. 6 weeks, presented the following changes: cirrhosis and dysfunction of the thyroid gland, physiological involution of the adrenal cortex and hypoplasia of the chromaffin portion, retrogressive changes in Hassel's bodies with an increase in their number, hypoplasia of thymus cortex, incipient atrophy of the anterior lobe of the pituitary gland, and a normal pineal.

R. M. CLARK.

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5. Treatment.

Treatment of Disseminated Sclerosis with Antimony [*Terapia della Sclerosi a Piastre con Preparati d'Antimonio*]. (*Rivista Sperimentale di Freniatria, March,* 1930.) *Desogus.*

The author reviews the theories concerning the pathogenesis of disseminated sclerosis, and advocates its treatment with preparations

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of antimony, preferably in trivalent form. With these he has obtained encouraging results. He describes four cases in detail, which he treated as follows:

(1) Intravenous stibosan, 9 injections. Dose, 10 cgrm. increased gradually to 30 cgrm. Interval: Spread over three weeks.

(2) Intravenous antimosan, 15 injections. Dose, 2 c.c., increasing to 8 c.c. Spread over three weeks.

(3) Intravenous antimosan, 22 injections. Dose, 2 c.c., rising to 5 c.c. Spread over six weeks.

(4) Intravenous antimosan, 7 injections. Dose, 2 c.c., rising to 5 c.c. Spread over three weeks, followed by stibosan, some injections intravenously, others intra-muscularly, 7 in all. Dose, 25 cgrm., rising to 30 cgrm. Spread over eighteen days.

The injections were usually followed by a transient rise of temperature. Untoward symptoms consisted chiefly in vertigo, preceded by nausea, headache, nasal and conjunctival congestion and weakness of the legs.

The improvement which occurred during treatment continued for some weeks after the termination of the injections.

H. W. EDDISON.

La Malarioterapia en el Tabes. (*Rev. Oto-Neur.-Oftal y de Cirurg. Neur., Rio de Janeiro, September*, 1928.) *Costa, G. Moura, and Pires, W.*

The authors treated twelve cases of tabes dorsalis with malaria, with the following results: The lightning pains and vertigo were at first increased, but later passed off. Ataxia and incontinence were greatly modified, and in 30% of the cases optic atrophy was arrested.

They describe the very serious condition of a patient suffering from tabes, and consider that one is justified in using malaria inoculation as a form of treatment. J. R. BEITH ROBB.

Inoculation of Recurrent Fever for Disseminated Sclerosis. (*Therapie der Gegenwart, No.* 12, 1929.) *Krause, P.* (*Med. Univ. Clinic, Münster*).

In two of four cases of disseminated sclerosis, in whom all therapeutic measures had failed, inoculation with recurrent fever resulted in marked improvement.

A 20-year-old patient, with complete spastic paralysis, was able after the fourth period of fever, to walk again with the aid of sticks, which he soon discarded.

The second case, that of a man who could walk only with the aid of two sticks, showed a striking improvement in the intention tremor and the gait. On examination three years later both cases showed that the improvement still continued.

The patients were given, in 0·8 c.c of physiological salt solution, 0·2 c.c. of the blood of a mouse infected with recurrent fever. In some of the cases the inoculation had to be repeated three or four times before the infection was transmitted. Under strict clinical observation the patients were allowed to pass through three or four

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periods of fever (three to four months). The temperatures rose to 104°. If necessary the physicians were prepared to arrest the infection by the intravenous injection of 0·45 c.c. of neosalvarsan.

The treatment is recommended as a last resort. [Wagner-Jauregg also recommends this therapy.—*Reviewer.*]

J. R. BEITH ROBB.

Occupational Therapy [*Sobre Laborterapia: El metodo del Dr. Hermann Simon*]. (*Rev. de Crim. Psiq. y Med. Legal, September–October*, 1928.) *Sicco, Antonio.*

Dr. Sicco, Professor of Psychiatry at Montevideo, describes Simon's method of occupational therapy, and comments upon the beneficial results obtained with it at the Hospital Vilardebo. He states that the most outstanding feature was the "tranquillizing of the agitated and turbulent wards."

He deprecates the older method, still adhered to in many mental hospitals, of keeping excited and noisy patients together in wards, where, in an atmosphere of irritation, they tend to remain turbulent, rowdy and pugnacious. His experience is that these troublesome patients can be made to work in silence, and that the administration of sedatives, hypnotics and baths can be greatly reduced.

He does not consider the treatment a cure for organic brain disease, but believes that it ameliorates a great many manifestations of the illness.

In addition to being a school of discipline, occupational therapy improves the functions of the body and directs the mental activities into a more healthy channel. It can be prescribed at the clinic as well as in the hospital. He refers to Horn, who advocated this form of treatment about 100 years ago, but does not agree with his opinion that the more disagreeable the work the better the results. It should, on the contrary, be interesting, agreeable and of apparent utility.

He recognizes that under certain circumstances, *e.g.*, acute illness, the treatment has its limitations, but considers that acute mental illness is not a contra-indication. The quality and quantity of the work, however, will eventually be prescribed more accurately as experience is gained.

In South America great difficulties will have to be surmounted in introducing Simon's method owing to overcrowding in the mental hospitals, lack of facilities, lack of medical officers and skilled staff, and also on account of bad discipline and poor administration.

In Germany the number of hospitals carrying out this form of therapy successfully increases daily, because the German has "in his blood the desire to work," but the author confesses regretfully that there are proverbs which apparently indicate that the reverse is the case with his own people.

In conclusion he states that in the modern mental hospital occupational therapy must and will take an important place as a form of treatment.

J. R. BEITH ROBB.

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Part IV.—Notes and News.

THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

Quarterly Meeting.

The usual Quarterly Meeting of the Association was held on Thursday, May 22, 1930, at the House of the British Medical Association, 19B, Tavistock Square, London, W.C. 1, under the Presidency of Nathan Raw, C.M.G., M.D., F.R.C.S.E., F.R.S.E.

On the previous day, at the same place, the Council and the Standing and Special Committees held meetings.

Council Meeting.

The principal matters dealt with, other than those mentioned by the President at the General Meeting, were:

(*a*) Sanction was given for payment of travelling expenses incurred for beyond 25 miles by honorary secretaries on the Association's business attending divisional committee or sub-committee meetings.

(*b*) Further progress was made in the founding of a special award for original research as recommended by the Research and Clinical Committee.

(*c*) An invitation to join with two other bodies interested in mental nursing education in founding a "live" register for certificated mental nurses was declined.

General Meeting.

(1) Minutes.

Dr. J. R. Lord (in the absence of the General Secretary) read the minutes of the meeting held on February 4, 1930, and they were approved and signed by the President.

(2) Obituary.

Dr. Sydney Coupland.

The President said it was his duty to report—and he did so with very great regret—the death, since the last meeting, of one of the honorary members, Dr. Sydney Coupland. He was a well-known physician, and had held with great distinction the post of Commissioner in Lunacy, from which he retired some years ago.

Dr. J. R. Lord (Horton) said Dr. Coupland from 1879–98 was Physician to Middlesex Hospital, and replaced a general physician when appointed Commissioner in Lunacy in the latter year. He had retired in 1921. He was elected an Honorary Member of this Association in 1902. He was much interested in epidemiology, and his reports on smallpox outbreaks to the Royal Commission on Vaccination were of great value. His Harveian Oration, in 1915, on "Observations on the Statistics in Regard to Mental Disorders and their Occurrence, particularly from an Ætiological point of view," was a model of concise and logical thought, but, owing to the distractions of the war, was not at the time appreciated as much as it deserved. It was an important work, and was still quoted as authoritative.

There was no need for the speaker to describe to those present the charm of Dr. Coupland's personality and his kindliness. His visit was always made welcome

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in every mental institution of the country. He had a keen insight into human nature and a great fund of quiet humour. Nothing escaped his observation, though while conversing with patients he would seem oblivious to his surroundings. Three words summed him up—they were "scholar," "physician" and "gentleman."

Dr. Coupland's retirement from the Board of Control was very much regretted by that Board at the time, and it was comforting to know that he had been spared for nine years to enjoy a well-earned rest after an arduous and useful life. Born in 1849, he was 80 years of age when he died.

He was sure all would agree to a motion expressing their regrets at his death, their sympathy with his relatives, and their appreciation of his eminent services to medicine and psychiatry.

The motion was carried by members rising in their places.

(3) Date and Place of Annual Meeting.

The President announced that the Annual Meeting would be held at Oxford from June 30 to July 4, and that Dr. T. Saxty Good, the President-Elect, asked for an early intimation from every member as to whether he would be able to attend.

(4) Report of the Council.

The President said that a meeting of the Council had taken place that morning, and many important matters had come before it. He only needed specially to mention two points. The Council had re-appointed the Parliamentary Agent, who had served the Association's interests well in the House of Commons. He had also to announce that Dr. R. R. Leeper, of St. Patrick's Hospital, Dublin, a Vice-President of the Association and Chairman of the Irish Division had been chosen as President Elect for the following year. [Loud applause]

(5) Election of Ordinary Members.

The President nominated Drs. M. J. McGrath and C. W. Bower as scrutineers for the ballot.

The following candidates were unanimously elected ordinary members of the Association:

Grant, Penuel Grant (Miss), M.B., Ch.B.St.Andr., D.P.H., Junior Assistant Medical Officer, East Riding Mental Hospital, Beverley, Yorks.
Proposed by Drs. T. M. Davie, E. P. Harding and R. Worth.

Cutts, George Lambert, M.R.C.S., L.R.C.P.Lond., L.D.S.Eng., D.P.M., Assistant Medical Officer, Bexley Mental Hospital, Bexley, Kent.
Proposed by Drs. G. Clarke, H. N. Parnis and L. C. Cook.

Ewen, John Harold, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Surrey County Mental Hospital, Netherne, Coulsdon, Surrey.
Proposed by Drs R. Coombes, W. D. Nicol and J. R. Lord.

Haworth, Norah Alice (Miss), M.A.Camb., M.R.C.S., L.R.C.P.Lond. D.P.M., Assistant Medical Officer, Severalls Mental Hospital, Colchester.
Proposed by Drs. R. C. Turnbull, R. Worth and J. R. Lord.

Fox, Edward Arthur Haslam, M.B., Ch.B., D.P.M., Assistant Medical Officer, County Mental Hospital, Parkside, Macclesfield.
Proposed by Drs. H. Dove Cormac, J. Ernest Nicole and L. C. F. Chevens.

Das, Banarsi, M.B., B.S.Punjab, Medical Superintendent-elect, Mental Hospital, Azra, U.P., India. Address: c/o Imperial Bank of India, 22, Old Broad Street, E.C. 2.
Proposed by Drs. G. Clarke, H. N. Parnis and D. R. Alexander.

Gemmell, Daniel Topping, L.R.C.P.&S.I., L.R.F.P.S.Glasg., D.P.M., Assistant Medical Officer, Storthes Hall Mental Hospital, Kirkburton, near Huddersfield.
Proposed by Prof. J. Shaw Bolton, Drs. C. W. Ewing and M. J. McGrath

Armitage, Bernard William Francis, M.A., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Croydon Mental Hospital, Upper Warlingham, Surrey.
Proposed by Drs. H. M. Berncastle, T. P. Rees and R. Worth.

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CANNON, H. C. A. TANDY, Surgeon Lt.-Commander R.N. (retired), L.R.C.P. &S.I., Resident Physician, Moorcroft House, Hillingdon, Middlesex.
Proposed by Drs. G. W. B. James, R. J. Stilwell and H. F. Stilwell.

(6) DISCUSSION: "AMERICAN PSYCHIATRY AND ANY PRACTICAL BEARING IT MIGHT HAVE IN THE APPLICATION OF RECENT LOCAL GOVERNMENT AND MENTAL TREATMENT LEGISLATION."

Dr. A. A. W. PETRIE (Banstead), in opening this discussion, said he would like to confess, before he gave his impressions,* that no one appreciated more than himself the extraordinary fallacies to which tourists were liable. Many members had been longer in America than he was on this fleeting visit, and many of the impressions he had received might have been seen in England if he had kept his eyes more widely open at home. He had visited American general and mental hospitals, psychiatric clinics, reception units, observation wards, and mental deficiency institutions, as well as mental hygiene centres and various forms of child guidance organizations and the associated nursery schools. Observations were also made of psychiatric work in connection with juvenile courts.

Each State had its own method of dealing with the problems involved. In the progressive Eastern States it was usual for the mental hospital service to be a sub-section of the State hospital services under a medical commissioner. Concentration of executive authority in the State rendered progressive development easier, and there was less difficulty in obtaining legislative and other changes. In New York and New England well-organized State social services were being developed. The larger unit provided by the State allowed a co-ordination of activities not possible in smaller units. New York State, for instance, dealt with over 63,000 patients drawn from a population of 14,000,000. The Local Government Amendment Act, 1929, however, did make one authority in an administrative area responsible for the treatment of the early stages of mental disorder, and it was hoped that co-ordinated and efficient reception hospitals would take the place of the present observation wards in London and elsewhere, many of them of doubtful efficiency. He expressed the further hope that the Mental Treatment Bill, when it became law, would allow of the development of voluntary clinics on the same lines in the Maudsley Hospital and the famous Phipps Clinic in Baltimore. The latter consisted of 60 beds and an out-patient department, and education and research were prominent features. Notable also was the Clinic at Philadelphia, a hospital somewhat resembling Bethlem in London. It had decided to take a place in the country for certified cases of longer duration and leave in the city a hospital and a department for out-patients. The New York Psychiatric Institute connected with the medical unit of Columbia University would be one of the most notable in the world. Well-found reception hospitals and wards were increasing in number; that was one of the most hopeful signs in the United States.

Dr. Petrie doubted whether such hospitals and psychopathic clinics should be an actual part of the hospital to which they were attached. The out-patient department at the Boston Psychopathic Hospital which was the clearing-house for Boston area, attracted as many patients as the corresponding out-patient department at Boston General Hospital. In the event of noisy patients having to be taken, double windows should be provided. The work of these reception units was largely determined by the source of the admissions. In the Chicago Clinic, with its 175 beds, about 100 of these had to be cleared weekly in order to deal with new admissions. Dr. Petrie usually found that these units had not sufficient staff to deal with the great amount of material passed through them. A unit with 600 beds was being projected in New York. The chronic patients in the large State hospital in America were not any better dealt with, in Dr. Petrie's opinion, than this class were in England, and in the former country overcrowding prevailed at many places. Much difference of opinion existed in America as to what was the best size of a mental hospital. In Massachusetts, a very progressive State, 2,000 patients was the usual limit. He found in the States a similar tendency to that in England to modernize old hospitals by building new and up-to-date units for recent admissions, and infirmary blocks or hospitals for those suffering

* *Vide* p. 419 *ante*.

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from physical diseases. He also saw in America good examples of the villa or colony hospital.

The consultants on the medical staff of American State hospitals were, said Dr. Petrie, usually appointed on a liberal scale. In the progressive States the house medical staff was in larger proportion to the patients than in England; in Massachusetts there was one assistant physician to 150 patients. A useful appointment common in the States was that of clinical director or clinical psychiatrist, who was equal in rank with the deputy medical superintendent and the pathologist. He directed and co-ordinated treatment, and was usually a teacher in a medical school. The laboratory facilities were similar to those in England, but equipment was usually more elaborate. A further aspect was that lectures to psychological and theological students and social workers in general were encouraged in the States. Much could be done in this way to break down the prejudice and mystery which were generally associated with mental hospital work. A sharp division existed between nurses and attendants, based upon the preliminary education required. Attendants had no special training. The line of cleavage would become more marked in the future when a complete secondary education for the nurses was demanded.

Occupational therapy, Dr. Petrie considered, was more broadly developed in the States than in this country. At St. Elizabeth's Hospital, Washington, for 4,000 patients, 16 occupational therapy officers were engaged. The hospital farms tended to be larger than here. Canning of meat and vegetables was commonly seen. Hydro-therapeutics was well organized, and hot baths and packs were usually employed—sometimes under conditions which in this country would be termed "restraint." Electrical treatment installations were generally of a high standard. Diathermy and other high-frequency apparatus were frequently used to induce high temperature in the treatment of general paralysis. Ultra-violet and infra-red rays were in general use, and it was common to see automatic recording apparatus in connection with bath treatment and blood-pressure.

Out-patient departments for mental cases were usually run in connection with the State hospitals. This certainly kept the medical staff in touch with the early phases of the disease. It was considered an advantage that the granting of trial or discharge should be vested in the medical superintendent, such decision being assisted by staff conferences at which the patients were examined. The terms of commitment, he said, varied in the different States, but, on the whole, were not much different from those obtaining in England. Temporary observation was permitted from 10 to 30 days. Several States permitted voluntary admissions, but owing to the overcrowded condition of the mental hospitals few were received on this basis in the State hospitals. With the cafeteria (self-service) system (which he described in some detail) there was a minimum of waste. Still, he did not think that even the advantages of the system would justify the cost of initiating it in this country. An interesting development was the wide establishment of beauty parlours and hairdressers' shops in State hospitals. They did not cost a great deal, and did much to improve the appearance and increase the self-respect of the woman patients. Another pleasing feature was the combined canteen and club-rooms which were provided for the patients on parole. The cost per patient per week in the States averaged about 35s. In Canada it was rather less, in New York a little higher.

Dr. Petrie was favourably impressed with the sense-training classes which he inspected at Wrentham and Letchworth. To a great extent the institutions trained their own people for the work, as there were not many trained teachers available. Child guidance, nursery schools and parent guidance were comparatively new features, and all these agencies had a psychiatrist who acted as director. Sometimes a children's physician, a social worker, and one who specialized in recreation were added. This work had been originally started in connection with juvenile delinquency.

The mental hygiene movement had done much to stir and educate public opinion in the States, and progress was being made because the profession and laity in the States were being educated to take a more reasonable attitude towards mental illness.

The PRESIDENT said he was sure the meeting felt grateful to Dr. Petrie for this very interesting description of his visit to America.

He would now ask Dr. J. R. Lord, who was the Association's representative

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at the recent International Congress on Mental Hygiene, to continue the discussion.

Dr. J. R. LORD (Horton) said Dr. Petrie, in his remarks, had covered a good deal of ground, so much so that it left him (the speaker) much less to say than he would otherwise have had, but, like Dr. Petrie, he had written a rather long paper on his impressions of American psychiatry.* Time, however, would only allow him to comment on what was germane to the subject under discussion. It was also his duty to report on how he had carried out his mission as the representative of the Royal Medico-Psychological Association at the First International Congress on Mental Hygiene held at Washington, D.C., May 5–10, 1930.

In this respect he need only say that he had conveyed on arrival the President's compliments to H.M. Ambassador to the United States and to the President of the International Congress.

Other interesting incidents during his visit would be fully described in his paper when published in the *Journal of Mental Science*.

His visit to the States had been a short but intensive one. He had been enlightened on many subjects and disillusioned on a number of others.

The medical profession in America was not, he said, anything like as unanimous on the value of sterilization in psychotics or mental defectives as was thought. The layman, however, had taken up the subject keenly.

An important discussion took place at the Congress on the organization of the mental hospital in the mental hygiene service. Dr. Lord expressed his own view that if care were not taken there was a danger that psychiatry might again become a closed system, and revert to a position of isolation. There should rather be a "psychiatrization" of all medical and social services, leaving to psychiatry the special care and treatment of actual mental disorders from their earliest stages.

The magnitude of the problem of the mentally afflicted in the United States was probably greater than in England. The rate per 100,000 of the general population in America for first admissions to mental institutions of all kinds in 1929 was 76·0; in England and Wales it was 45·4. In America 277·7 per 100,000 of the population were in mental institutions; in this country 290·6. To the American figure for comparative purposes must be added 24·0 for parole cases, giving a total figure for that country of 301·7. In America there were 900,000 people known to be feeble-minded, *i.e.*, 8% of the total population.

American State institutions were for the most part shockingly overcrowded, even up to 50% of their measured accommodation.

State control of mental institutions had been commented upon favourably, but Dr. Lord could not help thinking that such a state of overcrowding would not be tolerated if the responsibility for providing the accommodation had lain with local authorities as in England. He had always laid it down that the more closely local people were identified with the care and treatment of their mentally afflicted and defective cases, the sooner ignorance and prejudice regarding them would be dispersed and the better provision made for them. The need for State control and for judicial intervention in the practice of psychiatry could then be reduced to minimum requirements. It was for the State to lay down great principles and advise how they should be carried out, reserving to itself a veto when such principles were disregarded.

One thing that appeared to be certain was that America had no intention of continuing to solve its psychiatric problems by bricks and mortar alone. That was the lesson America had for this country. Child guidance and welfare work of all kinds directed towards the prevention and early treatment of mental disorders; eugenic measures and parental education; and as far as buildings were needed, psychopathic hospitals and clinics, out-patient departments and psychopathic wards in general hospitals were to have the drive of the State dollars for the future—hence to some extent the reluctance to increase the State hospital accommodation.

America had also lessons for us in the importance it attached to the psychiatric education of medical men, social workers, occupational therapists, and others in the sphere of public welfare.

Research work, too, was more widely developed, and received greater support and encouragement both from the State and private citizens than in this country.

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* *Vide* p. 456 *ante*.

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Touching on legal matters, Dr. Lord said that as regards the mental hospital services (and certainly not if the Mental Treatment Bill became law) America had little to teach us except in respect of the way in which patients were allowed out on leave or discharged.

Although many State hospitals and municipal clinics could admit voluntary patients (the state of mind qualifying for such seemed to him almost to exclude any aberration), these did not receive much encouragement from the hospital authorities, judging by conversations he had had with many superintendents from all over the States. The overcrowding in the State hospitals, too, was against it.

A common practice was admission on two medical certificates attested by a judge who, upon the evidence, might commit the patient to a mental institution or temporarily for a period of days pending the determination of the patient's insanity, but on two such attested certificates alone a patient could, in an emergency, be detained but only for periods varying from 5 to 30 days if a "hearing" were demanded by the patient or his friends. Then the case was heard by the judge, who made out a committment order, or directed the patient to be set at liberty.

Some such admission procedure was thought, in many State hospitals, to be the wisest course even in non-litigious and voluntary cases, in order to avoid later complications.

Objectionable forms of judicial intervention still existed, but America did not seem to mind very much. A period of temporary and non-voluntary treatment for twelve months without any judicial intervention as proposed under our Mental Treatment Bill was, generally speaking, in America considered unthinkable by both medical and legal authorities. The stigma of lunacy, strong in England, hardly existed, he thought, in America. Both medical and legal opinion seemed to be that unless the patient signified his willingness to be detained for mental treatment, then a judge's order must sooner or later be obtained—usually sooner. He did not think American opinion on this matter would change, and why should it under the circumstances?

As in England, it was the hospital comparable to our registered hospital, which received a majority of voluntary admissions. He hoped that our experience under the Mental Treatment Act would not, as regards voluntary admissions to public hospitals, be the same as in America. He felt sure it would not if Sections 1–5 were properly provided for and administered by the Local Authorities.

He had been much impressed by the way America was seeing to it that the moulding of its future citizens during pre-school, school, high-school and university age should not suffer by reason of neglect of the essential aid psychiatrists, medical psychologists and trained social workers could give.

The introduction of psychiatrists as an integral part of college and university organizations was one of the most important advances America had made in modern times. That this country had much to learn from America in this matter, that should give rise to serious reflection.

He said he had been most kindly treated and hospitably entertained during his visit to America. Very soon had he forgotten that he was in a foreign country. The conditions of life, both intellectual and social, seemed so like those at home that the playing of the "Star Spangled Banner" or "Yankee-doodle" instead of "God Save the King" had startled him. He thought that any real enmity between the two nations was impossible, despite the vagaries of politicians. Even the presence of the negro soon excited no special interest. The only thing that bothered him was the currency, and he had never got used to that.

Dr. HAMILTON MARR (Edinburgh) asked whether Americans going in for psychiatry were required to pursue a definite course of study and take a diploma. In the Department of the Seine they insisted that those taking important positions in psychological work should have been medical officers of mental institutions for three or four years, and should pass examinations on those subjects before they became doctors. He would like to know whether a Diploma in Psychological Medicine was available to students in America.

Dr. LORD, replying, said he did not think there was anything in America comparable to the British Diplomas in Psychological Medicine. In the New York State Psychiatric Service the passing of a proficiency examination placed a medical officer in a grade which rendered him eligible for higher appointments as vacancies occurred. Medical officers were posted to such appointments by the State Mental

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Hygiene Department. It was something like our Army and Navy system of promotion, and had much to commend it if factors other than mere seniority on the list were taken into account by the selection board.

Dr. PETRIE said that in the more progressive Eastern States of America higher positions could only be obtained after five years' experience.

Dr. R. R. LEEPER (Dublin) said that a great many Irish mental nurses obtained appointments in the States. It had come to his knowledge that those girls who possessed the Royal Medico-Psychological Certificate received a £40 increase in salary in consequence.

Dr. PETRIE, repling, said that he had heard that the Association's Certificate was much valued in the United States. If this fact were more widely known in the mental hospitals of this country, the difficulties in regard to the shortage in some places of mental nurses would be intensified by their emigration to the States. In his hospital nurses had obtained the Association's nursing certificate for the special purpose of taking up appointments in America.

The PRESIDENT: Has Dr. Lord any further interesting remarks to make?

Dr. LORD said there were two other points in which members would be interested. He visited St. Elizabeth's Hospital, Washington, as a guest, with others, of Dr. William A. White, the President of the Congress. As far as he could observe there were bars to the windows everywhere and behind these a thin mesh of wire-work. He asked his American friends whether that was common in American State hospitals, and the reply was in the affirmative. Obviously barred windows in mental institutions did not, in America, incur the strong disapproval they did in England.

He was much struck by the prevalence of mechanical restraint in American State hospitals and clinics. He had been told that it took the crudest form in some of the Southern States. One should not generalize too readily as to the advances made in the treatment of mental cases in America, or set up the standard of the Eastern States as applicable to all American psychiatric institutions. He had elsewhere compared the States in America to the countries in Europe, and it was important to bear this in mind when speaking of things American. There were great differences in the various forty-eight States. The backwardness in one was surprising, especially as it might be next-door neighbour to a State very enterprising and progressive.

Dr. BEDFORD PIERCE remarked that there was this to be said about the provision of bars to windows of mental institutions in America, the climate in America prevented any proper ventilation if windows were only partially opened, as in this country. It was necessary that there should be a free access of air through the wards, and widely opened windows and the provision of bars might be the only way in which this could be secured.

Dr. LORD, in reply, said that the reason given by Dr. Bedford Pierce for the use of barred windows had been mentioned to him when he was in America. Still, there were many modern patterns of non-escape windows which permitted of efficient ventilation and which were being used in this country. One of these had been put into use in the New York Psychiatric Institute. It could be locked in a non-escape position allowing plenty of natural ventilation, and when unlocked could be opened freely and cleaned with the greatest ease, both inside and outside, from the interior. This and other types had been available in America for some time, but there seemed to be no hurry to put them into general use. He had spoken of mechanical restraint and barred windows merely to show that practical necessity rather than emotionalism predominated in America.

Dr. Lord stressed again that America had no intention of settling its psychiatric problems by treating end-products only, but by prophylaxis and early treatment in out-patient departments, special clinics, and with the aid of social workers and child guidance societies. A recent return of psychiatric clinics for children showed the number to be 470. Ten years ago only 65 existed. They now dealt with more than 40,000 children annually. This growth showed the reliance America had placed in these organizations in solving its psychiatric problems.

Dr. SOUTAR thought that before the meeting closed Dr. Petrie and Dr. Lord should be cordially thanked for the very interesting information they had given. It was cheering to reflect that, whatever might happen in the domain of golf, etc., Britons could at any rate pat themselves on the back in regard to psychiatry; on that subject at all events there was no need for us to have any sense of inferiority

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to depress and oppress us. As a Scotch lassie said, "It is a very good thing to travel to see how poor other folks are."

Much of the information which had been given to the meeting was very startling. America was a very big place, and the differentiation between one State and another was great. We had the advantage of being an old country, which had gradually come to see that certain improvements were possible. In certain States in America many restrictions long banished here were still present. As to Dr. Lord's remark that there never would be any change, the same thing might have been said of this country, and not many years ago. The attitude of the legal mind towards psychiatry and mental affairs was now very different from what it was formerly. One had no right to say that the American legal mind would never change on this subject.

The Association felt very much indebted for the information given, which would no doubt be printed in the Journal, thus giving members an opportunity of studying it.

Dr. PETRIE, in reply, said he only wished to say that he might possibly have conveyed a false impression. He had heard a good deal of the other side of the subject, but it did not interest him personally in what respects the Americans did badly, but rather to know what would enable us in this country to do things better. He did hear stories about how people were appointed to posts, and he felt glad that such things did not happen in England.

Dr. LORD, in reply, thanked Dr. Soutar for his very kind remarks. His, the speaker's, principal point was that the psychiatrists in America were not asking for the cessation of legal intervention in matters of psychiatry. Nor did the public ask for it. That was his reason for saying that the legal position on the matter was not likely to alter. If the people did ask for it, he concluded, from conversations with judges and others, that American lawyers would yield on the matter much as those in our country had done. The question had never been acute there, and was not likely to be so, for the reason he had stated in his address.

This terminated the meeting.

DIVISIONAL MEETINGS.

SOUTH-EASTERN DIVISION.

THE SPRING MEETING of the South-Eastern Division was held on Wednesday, April 30, at Hellesdon Mental Hospital, Norwich, by courtesy of the Committee of Visitors and of Dr. David Rice, the Medical Superintendent; the Divisional Committee of Management met at 1.15 p.m.

From 11.30 a.m. various parties were taken round the Hospital and grounds.

At 1.45 p.m. members and guests were entertained to lunch, at which the Chairman of the Committee of Management presided as host.

The CHAIRMAN gave the toast of "The King," and Dr. H. G. L. HAYNES proposed the toast of "Our Host," coupling with it the names of Mr. Alderman H. E. Witard, Chairman of the Committee of Visitors, and Dr. David Rice.

Mr. WITARD responded in a brief and humorous speech.

The General Meeting was held at 3 p.m.

Present: Lord Sandhurst, Drs. M. R. Barkas, C. Bower, J. D. G. Burks, M. A. Cholmley, A. G. L. Haynes, H. Hinchco, W. Brooks Keith, W. J. T. Kimber, A. M. McGrath, M. E. Martin, W. G. Masefield, E. D. T. Roberts, A. C. Sinclair and R. M. Stewart; Dr. C. R. F. Hall, visitor.

The minutes of the last meeting were taken as read and confirmed.

It was decided to accept the kind invitation of Dr. D. I. O. Macaulay to hold the Autumn Meeting at Chiswick House, Pinner. The date was left to be arranged by the Secretary.

The following was elected an Ordinary Member of the Association:

JOHN JAMES BLACK MARTIN, M.A., M.B., B.Ch.Edin., D.P.M.

Proposed by Drs. D. Rice, H. M. Berncastle and O. G. Connell.

Dr. Noel Sergeant was re-elected Divisional Secretary, and Drs. A. Helen A. Boyle, Hubert J. Norman, David Rice, E. D. T. Roberts, W. Robinson and F. R. P. Taylor were elected as representative members of the Council.

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Dr. F. R. P. Taylor was elected Divisional Chairman.

Dr. KIMBER spoke of the new arrangements for nursing examinations. For the guidance of the Educational Committee names of examiners and examination secretaries were submitted.

PAPER.—**"The History of Hellesdon Hospital,"** by Dr. DAVID RICE.

Dr. MASEFIELD opened a discussion on the Mental Treatment Bill, and was followed by Dr. MARY BARKAS, Lord SANDHURST and Dr. HAYNES.

There was then a brief demonstration of cases of general paralysis which had been treated by injections of tryparsamide with good results.

Members and guests were then entertained to tea.

SOUTH-WESTERN DIVISION.

THE SPRING MEETING of the South-Western Division was held by kind invitation of Sir C. H. E. Chubb, Bart., and Dr. S. Edgar Martin, at Hume Towers, Branksome Wood Road, Bournemouth, the seaside Home of the Old Manor, Salisbury, on April 24, 1930.

Present: Drs. M. T. Archdall, J. R. Benson, E. Casson, R. Eager, W. J. A. Erskine, G. W. T. H. Fleming, A. C. King-Turner, P. Lornie, S. E. Martin, A. S. Mules, B. M. Mules, J. J. O'Reilly, G. E. Peachell, N. R. Phillips, W. S. J. Shaw, J. G. Smith, J. D. Thomas, J. P. Westrup, E. Barton White and H. Wolseley-Lewis.

Visitors: Sir C. H. E. Chubb, Bart., Drs. Weatherly, Hyla-Greves, McCall, Cowie, Colman, Vivian, Morton and Barber, and Mr. Swords, K.C.

Dr. Wolseley-Lewis presided.

The CHAIRMAN proposed that the best thanks of the meeting be given to Sir Cecil Chubb, Bart., for so kindly entertaining members to lunch.

The minutes of the last meeting were confirmed and signed.

Apologies for absence were received from the President, ex-President, Registrar, Drs. Soutar, Townsend, Scholberg, Neill, McGarvey, Edwards and other members.

The resignation of Dr. William Starkey, Hon. Divisional Secretary since 1922, was received with great regret.

Dr. S. E. Martin was unanimously elected Hon. Divisional Secretary, on the proposal of Dr. J. G. SMITH, seconded by Dr. M. T. ARCHDALL.

A Remington portable typewriter was on view at the meeting, and the Hon. Divisional Secretary was instructed to forward it to Dr. W. Starkey with an appreciation of the good work he had done as Secretary of the Division since 1922.

Drs. Barton White and J. McGarvey were unanimously elected Representative Members of Council on the proposal of Drs. PEACHELL and WESTRUP.

Dr. E. Barton White was elected Divisional Chairman on the proposal of Drs. J. G. SMITH and J. P. WESTRUP.

The following was unanimously elected an Ordinary Member of the Association:

THOMAS JOHN HENNELLY, M.B., B.Ch.N.U.I., Assistant Medical Officer, City and County Mental Hospital, Powick, near Worcester.

Proposed by Drs. H. F. Fenton, P. T. Hughes and T. C. Graves.

The date of the Autumn Meeting was fixed for Thursday, October 30, 1930, the Hon. Divisional Secretary to arrange the place of meeting.

PAPER.—**"The Yesterdays and To-days of an Alienist,"** by Dr. L. A. WEATHERLY, which was discussed by Drs. WOLSELEY-LEWIS, BARTON WHITE and others.

PAPER.—**"The Ætiology of Dementia Præcox"** (*see p.* 505), by Lieut.-Col. W. S. J. SHAW, which was discussed by Drs. ERSKINE, BENSON and WEATHERLY.

A hearty vote of thanks to the readers of the papers was proposed by Dr. WOLSELEY-LEWIS and seconded by Dr. BARTON WHITE.

The members were most hospitably entertained to a lunch at the Royal Bath Hotel, Bournemouth, at which Sir Cecil Chubb, Bart., presided, and tea was provided later.

During the morning members had the opportunity of visiting and inspecting Hume Towers and the beautiful grounds surrounding it, and were much impressed.

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NORTHERN AND MIDLAND DIVISION.

THE SPRING MEETING of the Northern and Midland Division was held, by the courtesy of Dr. Mary R. Barkas, at the Lawn, Lincoln, on Friday, April 25, 1930.

Present: Drs. Gilmour (Chairman), M. A. Archdale, M. R. Barkas, G. L. Brunton, T. W. Davidson, J. F. Dixon, H. Dove-Cormac, H. G. Drake-Brockman, C. J. Henderson, J. MacArthur, M. J. McGrath, J. M. Mackenzie, J. Mackay, J. E. Middlemiss, G. E. Mould, G. G. Parkin, J. I. Russell, F. L. Scott, R. C. Stewart, C. J. Tisdall, H. C. Waldo and H. A. Wilson.

Visitors: Drs. N. Mackenzie and A. and B. Mules.

Members were shown round the hospital during the forenoon, and were afterwards entertained to lunch.

Dr. J. GILMOUR proposed a vote of thanks to the Governors of The Lawn for their kind hospitality, and the Divisional Secretary proposed the health of the Medical Superintendent.

Dr. Gilmour presided at the general meeting, which began at 2.40 p.m.

The minutes of the previous meeting, having been published, were confirmed and signed.

Apologies for absence were communicated from Drs. Bain, Bartlett, Coupland, Ewing and Vincent.

It was resolved that the resolution of October 24, 1929, *viz.*, "That the election of a business committee is not necessary" be rescinded, and that a standing Committee of Management, consisting of three members, be elected. The following were thereupon elected: Drs. Archdale and Dove-Cormac.

The following were elected representative members of Council: Prof. J. Shaw Bolton, Dr. H. Dove-Cormac and Dr. J. Gilmour.

The SECRETARY suggested that the Council be asked to sanction elections by show of hands under revised bye-law 26, but the members present decided that no alteration of the old procedure should be made.

Dr. J. Gilmour, proposed by Dr. STEWART, seconded by Dr. ARCHDALE, was unanimously elected Chairman of the Division for the ensuing year.

Dr. H. Dove-Cormac was nominated for election to the Mental Nursing Advisory Committee to the General Nursing Council.

A letter was read from the Secretary of the Educational Committee, with reference to the proposed appointment of Examiners and Examination Secretaries, in connection with the Nursing Certificate, and the Secretary was instructed to forward certain names.

It was resolved that it be left to the Secretary to arrange the date and place of the Autumn Meeting.

A letter having been read from Prof. J. Shaw Bolton with reference to the Registration of Mental Nurses holding the Royal Medico-Psychological Association Final Certificate, the following Resolution was proposed by Dr. ARCHDALE, seconded by Dr. MCGRATH, and carried:

> "That the Representative members of the Northern and Midland Division be instructed to bring to the notice of the Council, that this meeting is of opinion that no steps should be taken towards the institution of a new register of Mental Nurses until there has been given to the Divisions an opportunity for discussion of the proposals."

PAPER.—**"Observations on the Mental Treatment Bill,"** by Dr. MARY R. BARKAS.

Dr. BARKAS suggested that the discussion which would follow her paper might most usefully be limited to certain points in regard to which the proceedings in the House of Commons and at the Special Committee showed that misunderstandings existed in the lay mind, and to questions of policy on which local uthorities might need advice. Five main points were dealt with by the speaker and were offered for discussion:

(1) That a special committee of the local authority, on which both existing mental hospital committees and the public health committee should have equal representation, should be set up to consider the new and altered services for which the Bill provides. She thought that the continued separation of these services would lead to undesirable effects, such as difficulty in recognizing what advantageous arrangements could be adopted. The artificial division between the new services enjoined by the Bill and the existing mental hospital service was to be deprecated.

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(2) That as the temporary cases would almost certainly be cases of acute mental illness requiring expert mental advice for their treatment they would need all the safeguards of certification, and that, except in a few large towns with teaching hospitals, they could best be treated in existing mental hospitals with suitable admission blocks, rather than in special clinics. Until convalescent such cases should not be associated with voluntary boarders.

(3) That voluntary boarders comprised two categories—those who needed mental hospital conditions for treatment or might be certified, though willing to co-operate in this treatment, and those who were quite safe in ordinary surroundings, and needed no special nursing, but for whose treatment no suitable places are provided. The former group could best be treated in special blocks or villas attached to the existing mental hospitals; but special provision should be made near these hospitals or elsewhere for the second group—something of a convalescent home or hydropathic description to which convalescent and really non-psychotic cases could go. Such provision should be quite apart from the mental hospital, but under the same staff and supervision.

(4) That out-patient departments must be staffed by experienced psychiatrists, whether attached to general hospitals or separate clinics, and that where a mental hospital was sufficiently accessible, an out-patient department attached to its admission or convalescent department may be of great value. After-care and social service should be an essential part of any out-patient department.

(5) That local authorities should work in close touch with all the existing voluntary organisations working in the field of public health.

Drs. GILMOUR, DIXON, DOVE-CORMAC, ARCHDALE and MCARTHUR contributed to the discussion, and Dr. BARKAS replied.

There was then an interval of fifteen minutes, during which tea was served.

PAPER.—**"Notes on a Case of Moral Defect,"** by Dr. J. E. MIDDLEMISS, which was discussed by Dr. BRUNTON and others.

The Chairman thanked Dr. Barkas and Dr. Middlemiss for their interesting papers, and the meeting concluded at 5.30 p.m.

SCOTTISH DIVISION.

THE SPRING MEETING of the Scottish Division was held at Hawkhead Mental Hospital, Crookston, Glasgow, on Friday, March 28, 1930.

Present: Drs. J. S. Annandale, R. Mary Barclay, A. A. Bell, Wm. M. Buchanan, R. B. Campbell, Henry Carre, W. D. Chambers, C. G. A. Chislett, A. Craig, Alex. Dick, A. M. Dryden, C. C. Easterbrook, D. K. Henderson, R. D. Hotchkis, J. A. Jenkins, John Keay, Neil T. Kerr, W. McAlister, J. H. Macdonald, J. McDougall, S. H. Maclachlan, Douglas McRae, W. McWilliam, A. S. Paterson, W. J. Richard, J. R. Robb, Donald Ross, C. J. Shaw and T. R. C. Spence.

Dr. R. B. Campbell, Divisional Chairman, presided.

The minutes of last Divisional Meeting were read, approved, and signed by the Chairman.

Apologies for absence were intimated from the President, Sir Arthur Rose, Prof. G. M. Robertson, Drs. J. H. C. Orr, J. H. Skeen, T. C. Mackenzie, R. Dods Brown, A. Ninian Bruce, Patrick Steele and W. Leggett.

Dr. Neil T. Kerr was unanimously elected Chairman of the Division for the year 1930–31.

Dr. Neil T. Kerr and Dr. C. J. Shaw were unanimously elected Representative Members of Council, and Dr. W. M. Buchanan was unanimously re-elected Divisional Secretary.

Dr. MCALISTER (Edinburgh) criticized the method of nomination for Divisional appointments, holding that the printed nominations prejudiced nominations by members voting at the meeting; and Dr. DOUGLAS MCRAE criticized the voting paper, holding that the instructions for recording votes were indefinite. It was explained to the meeting that both the method of nomination and the form of the voting paper were as prescribed by the Bye-Laws of the Association. After some discussion a committee, consisting of Drs. Neil T. Kerr, W. McAlister, Douglas McRae, with the Divisional Chairman and Divisional Secretary, both *ex officio*,

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was appointed to consider the method of nomination for Divisional appointments and to report.

The following candidates, after ballot, were admitted as ordinary members of the Association:

DONALD JOHN FORBES, M.B., Ch.B.St.And., Medical Superintendent, Baldovan Certified Institution, Craigmill House, by Dundee.

Proposed by Drs. Tuach Mackenzie, R. B. Campbell and W. M. Buchanan.

SARAH HODGSON MACLACHLAN, M.B., Ch.B.Glasg., Director, Scottish Western Asylums' Research Institute, 20, Royal Terrace, Glasgow, C.3.

Proposed by Drs. D. K. Henderson, A. S. Paterson and W. M. Buchanan.

The SECRETARY read the following Report of the Deputation appointed to wait upon the General Board of Control in connection with the Local Government (Scotland) Act, 1929:

"On December 23, 1929, a deputation from the Scottish Division of the Royal Medico-Psychological Association, consisting of Dr. R. B. Campbell (Chairman), Dr. John Keay, Dr. C. J. Shaw, Dr. J. H. MacDonald and Dr. Wm. M. Buchanan (Secretary), was received by the General Board of Control in connection with the Local Government (Scotland) Act, 1929, the Board consisting of Sir Arthur Rose, D.S.O. (Chairman), Sheriff Macphail, Dr. H. C. Marr, Dr. J. P. Sturrock, and Mr. A. D. Wood (Secretary).

"Dr. Campbell, in introducing the deputation, said that the Scottish Division of the Royal Medico-Psychological Association at a recent special meeting had discussed the provisions of the new Act in its reference to Lunacy and Mental Deficiency matters, and that owing to the magnitude and importance of the matters involved, and the impending changes in administration, the Division decided that a deputation should endeavour to lay the views of the Division before the General Board of Control. After going fully into the matter it was the considered opinion of the Division that Lunacy and Mental Deficiency Administration should be in the hands of a Special Committee directly responsible to the Local Authority.

"Before giving the reasons which had led the Division to form this opinion, Dr. Campbell stated that the Division welcomed the opportunity provided by the Act of getting rid once and for all of Poor Law Administration, and of conceiving mental disease as a result of illness and not of pauperism. The hope was expressed that under the Act provision of accommodation for Mental Defectives might be further expedited, and that arrangements for the early treatment of mental ailments without certification might be extended.

"*Résumé of Reasons given in Support of the Division's Opinion.*

"1. The special nature of medical work carried on in mental hospitals and institutions for defectives is entirely different from that of other special hospitals at present supervised by Public Health Authorities.

"2. This specialization is recognized by Medical Training Schools which have instituted Diplomas in Psychological Medicine or higher degrees in this specialty, possession of which is now generally regarded as a *sine qud non* for promotion in the mental hospital service.

"3. The specialized nature of nursing in mental hospitals and institutions for defectives is recognized by this association, which for the past forty years has carried on a specialized system of instruction, examination and certification for nurses, and is also recognized by the recently instituted General Nursing Councils, who have a special section of their registers for mental nurses.

"4. The administration of mental hospitals and institutions for defectives is governed by Special Acts of Parliament, which have made it possible for the insane in Scotland to have the special consideration and treatment necessitated by the peculiar nature of their disorder, and it is to-day admitted by all who have knowledge that Scottish Asylum administration is unexcelled. This achievement would have been impossible had it not been for the specialization in the lunacy statutes and in the composition of the Boards for the administration of these.

"5. Public Health Authorities and Medical Officers of Health with few exceptions are not conversant with this special work. This is particularly true in large burghs, where few councillors and members of public health committees have experience of the work of the present District Boards of Control.

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"6. The administration of mental hospitals and institutions for defectives has little in common with the administration of other hospitals.

"7. The statutory books and registers, official forms and system of accounting are peculiar to mental hospitals, and different from those in use in other hospitals, and cannot be brought into line with those of other hospitals.

"8. Mental hospitals and institutions for defectives have a special supervising authority—the General Board of Control—which continues to exercise its functions. The administration of laws and regulations affecting public health are under the supervision of the Department of Health. There might possibly be a conflict of opinion between these two supervising authorities. From the point of view of those directly responsible for the administration of mental hospitals and institutions for defectives the General Board of Control has always been a source of assistance, guidance and inspiration. Neither Public Health Committees of Local Authorities nor the Department of Health has that knowledge of the special requirements acquired by experience by the present General Board of Control and District Boards of Control.

"9. The functions of the General Board of Control extend not only to general management of mental hospitals—patients and staff—but to financial administration, such as rates of board, loans, acquisition of land, pensions, and also to plans of new hospitals, extensions of existing hospitals, etc. The Department of Health and Medical Officers of Health have nothing to do with these matters and are not generally conversant with them.

"10. Many problems still await solution, especially with regard to early treatment of mental disorder. These require special consideration and may involve changes in the lunacy laws. The delegation of such obligations to a committee which has already many responsibilities laid upon it would mean that advancement would be slow because of divided attention and consideration.

"11. Public health matters affect the community at large, while lunacy and mental deficiency are chiefly individual problems.

"12. The possibility of different aspects of mental hospital administration being relegated to different committees causes concern, *e.g.*, the proposal of Aberdeen Corporation to place the farm at Kingseat under the Cleansing Committee.

"13. In areas where the area served by the mental hospital is not co-terminous with that of the Local Authority, in the event of the work being delegated to the Public Health Committee which Medical Officer of Health would advise the Joint Committee?

"14. It is hoped that whatever scheme is adopted, it will apply uniformly to all the Local Authorities in Scotland, and will be one which is approved by the General Board of Control.

"Sir Arthur Rose, Chairman of the Board, thanked the deputation for the views expressed, and stated that the Board was fully alive to the difficulties which might arise in the working of the new Act. He stated that the General Board of Control would still control Lunacy and Mental Deficiency affairs throughout Scotland, and he assured the deputation that there need be no fear of interference by any other department. He said that the General Board of Control were issuing a circular to the various authorities, in which it was recommended that for the purpose of the administration of Lunacy and Mental Deficiency, there should be either a special Lunacy and Mental Deficiency Committee, or a Special Sub-Committee of an appropriate committee. The Board hoped that by the formation of a Special Committee in the case of Town Councils, and a Special Sub-Committee in the case of County Councils, the powers of adding co-opted members, as provided by the Act, would be taken full advantage of. This arrangement would enable members of the existing District Boards, who might be willing to continue their services, to act on these Special Committees or Sub-Committees of the new authorities. After some general conversation on the various points raised, Sir Arthur Rose stated that the views expressed by the deputation would receive the careful consideration and attention of the General Board.

"The deputation then withdrew."

The CHAIRMAN referred to the recent illness of Dr. Lewis C. Bruce, and the Secretary was instructed to write Dr. Bruce expressing the sympathy of the members, and their pleasure at learning of his return to duty.

Dr. MacDonald and his assistants conducted members round the Hospital, including visits to the new Isolation Hospital for enteric carriers, the recently

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completed Solarium and Occupational Therapy Workshops, and the Operating Theatre.

Members were kindly entertained to lunch at the Hospital, after which Mr. Robt. P. Duff, chairman of the Govan Board of Control, welcomed the Division to Hawkhead. Dr. CAMPBELL cordially thanked the Board and Dr. MacDonald and his staff for their kind hospitality, and for the arrangements made in connection with the meeting.

On the meeting re-assembling, Dr. J. H. MACDONALD and Dr. ANDREW ALLAN BELL gave an account of an investigation into an outbreak of enteric fever at Hawkhead during the years 1922–1927, which resulted in the segregation of twelve carriers. The paper was discussed by Drs. R. B. CAMPBELL, HOTCHKIS, EASTERBROOK, MCRAE and BUCHANAN and by Dr. DITTMAR, of the Department of Health in Edinburgh, who was present as a guest, and who had given valuable advice and assistance in stamping out the epidemic.

Dr. ERIC DOW read a paper on **"The Treatment of General Paralysis by Specific and Non-specific Therapy,"** which was discussed by Drs. J. H. MACDONALD, W. MCWILLIAM, D. K. HENDERSON, W. MCALISTER and DOUGLAS MCRAE.

A vote of thanks to the Chairman terminated the business of the meeting.

EXCRETION OF PHENOLS IN MENTAL PATIENTS.

(*vide p.* 277.)

ADDENDUM.

Omitted from text: "I wish to express my thanks to my colleagues at Severalls Mental Hospital for specimens and notes in regard to some of the cases recorded above, and to Messrs. W. F. Gifford and C. H. Taylor for their assistance in the laboratories of Cheddleton and Severalls Hospitals respectively."

EDUCATIONAL NOTES.

The Tavistock Square Clinic for Functional Nervous Disorders, 51, *Tavistock Square, W.C.* 1.—A Course of Twenty-four Lectures on Psychological Types and Mechanisms will be given at the Clinic on Wednesdays, beginning October 1, 1930, by H. Crichton-Miller, M.A., M.D., and E. Graham Howe, M.B., D.P.M.

These lectures are open to the medical profession only.

Fee for either series, £1 11*s.* 6*d.* Fee for both series, £2 2*s.* Tickets for the course to be obtained in advance from the Hon. Lecture Secretary at the Clinic.

A NEW BARD IN THE WEST.

We have not felt it within our province to review a book of poems, and if we did essay the task, it is doubtful whether any real value would be attached to our opinion. Notwithstanding this we feel it will be a matter of interest to know that one who has long been a member of our Association, and who used to attend regularly and frequently speak at its meetings until grievous physical disabilities, the outcome of wounds sustained on active service during the war, rendered this largely impossible, has found a new interest as a poet, which has done much to console him for the restricted part he has now necessarily to play in the pursuit of his profession as a psychiatrist.

The coming to light of this faculty to rhyme was a remarkable fact. Hitherto a possession quite unsuspected, it made itself felt with a rush so astonishing as to be alarming, and at a time when the future looked black and hopeless, which was toward the end of a long period of intense physical suffering, the outcome of pericardial and spinal injuries, the surgical relief of which had hitherto been deemed too dangerous to be undertaken. The cultivation and exercise of this

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new faculty has proved a great blessing to him, and helped much to his return to a life worth living.

Dr. J. L. Baskin's poems, chiefly descriptive of current incidents of general interest, began to be accepted by the Irish and Western newspapers. He is now a regular contributor to the latter. His first book of poems* has been sympathetically received by the medical and lay press, and he has been the recipient of many letters of appreciation and congratulation from those whose opinions command respect. The author feels that this book may be of service to the mentally afflicted by inducing an atmosphere of peace and contentment. He holds that the rhythm of verse is of real value in inviting sleep, and we venture to think that if this be true, no one will complain of any lack of rhythm for this purpose in Dr. Baskin's poems. He has therefore arranged with his publishers for his book of poems to be supplied to all mental hospital libraries on special terms.

Dr. Baskin went out to France with the 3rd London Regiment and was severely wounded more than once and was able to return to duty, but it was at the Battle of Messines in July, 1917, that he sustained almost fatal injuries.

J. R. L.

* *Poems by J. L. Baskin.* London: Arthur H. Stockwell, Ltd., 29, Ludgate Hill, E.C. 4. Price 1s.

JOINT BOARD OF RESEARCH FOR MENTAL DISEASES.

City and University of Birmingham.

Annual Report of the Laboratory for the Year Ending March 14, 1930.

(Abstract.)

General.—Research work has been directed towards the investigation of the ætiology and primary changes in chronic disease, especially in the neighbourhood of the brain. Starting with the view that defect of function of brain-tissue means disordered mental function, and with the findings of chronic disease of the sphenoid sinus and pituitary gland in cases of mental disorder, an effort has been made to investigate and correlate these pathological changes. In addition much biochemical and bacteriological work has been done on other pathological conditions found in association with cases of mental disorder.

Bacteriological.—3,750 specimens have been examined in the laboratory, including 643 of fæces and urine, 38 of which showed *B. dysentery Flexner Y.* (some of these being repeat specimens of the same cases); non-agglutinating paratyphoid was found in 17 specimens; *Bacillus Friedländer* in 127; *B. fluorescens* and *pyocyaneus* 25; streptococci in 60; other organisms were found in addition to *B. coli* in 87 specimens. An organism agglutinating *B. typhosus* "O" was recovered in one case. Of 871 Wassermann tests, 151 were positive, = 19·4%. Of 1,014 Widal agglutination tests, 542 were positive (several repeats included in this figure). 18 of 205 throat swabs were positive for Klebs-Lœffler bacillus, and one of 6 films for gonococci was reported positive.

As in previous years a large proportion of new admissions gave positive serological agglutination to the paratyphoid and dysenteric group of organisms. A considerable amount of time has been spent in the study of these, and in carrying out animal experiments to elucidate the various problems which have arisen. 262 specimens from 33 cases of nasal sinus wash-outs have been examined, 50 of these anaërobically, with a positive result in only 4 cases; *Micrococcus catarrhalis anaërogenes* has been recovered twice, and also 3 times from tonsils removed at operations. The Pfeiffer influenza bacillus has been isolated from only 2 cases of sinus wash-outs, but it probably occurs in about 10% of the cases, since minute colonies are often obtained which cannot be subcultured. One case of brain culture *post-mortem* gave a culture of Pfeiffer influenza bacillus. 23 brain cultures have been made, 6 brains uniformly containing organisms. Gram-negative organisms isolated from fæces and other sources have been examined for reduction of nitrates and sulphates as well as for their starch-fermenting and spreading properties (the latter being evidence of very active motility). Improvements have been made in some laboratory implements; important cultures and specimens are

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examined under a dust-and draught-proof glass frame, and large Stauffer lubricators fitted with wire gauze are used to prepare brain mashes aseptically. A high-speed Couprie centrifuge has been installed. Anaërobic technique is that published by Ford Robertson. Fildes medium is now used for the cultivation of Pfeiffer bacillus, trypagar for meningococci and hæmoglobin agar for streptococci.

Experiments are in process to determine the effect of brain-tissue in inhibiting or accelerating the growth of certain organisms. The specific gravity of organisms is being determined by special methods.

Histological.—Post-mortem examinations have substantiated our previous findings of a large proportion of cases with macroscopic changes in the sphenoidal sinuses and antra. Adhesions are often found in the region of the middle fossa between the pia arachnoid and dura-mater, from which it is supposed that previous mild sepsis has extended *vid* the fifth nerve to the brain membranes. We have also collected a number of specimens illustrating extradural hæmorrhages chiefly in cases of general paralysis. Many cases show adenoids as distinct remnants even in elderly people, and a septic condition is often found, in which beads of pus can be expressed from the tissues in the neighbourhood of Rathke's pouch. The investigation of the spread of actual organisms to the brain membranes is being continued, and in the study of this condition a number of experiments with animals are in progress.

Chemical.—The oxygen capacity of patients' blood has been compared with the total hæmoglobin content in order to find out whether forms of hæmoglobin useless for respiratory purposes occur. A special form of the Haldane apparatus has been devised for greater accuracy and reliability, and the hæmoglobin was determined by Stadie's cyano-hæmoglobin method, the hæmoglobinometer, and micro-titration of the iron. 130 specimens from 100 cases have been examined and deficient oxygen capacity recognized in 28 cases—the maximum difference being 12½%. The presence of this inactive pigment can be correlated with evidence of blood infection by intestinal organisms as shown by a positive Widal agglutination. The permeability of blood-corpuscles to various salts has been determined. It has been gound that bromide penetrates easily and sulphate hardly at all. The work is being continued. Also the absorption of sulphate has been studied in animals. Suitable technique resulted in a raising of the blood-sulphate by 100% and of the sulphate of the C.S.F. about 40%. In one case of artificially induced aseptic meningitis the C.S.F. sulphate was increased 80%. Sulphate disappeared rapidly from the blood. 58 specimens of C.S.F. have been examined for chloride content: 3 were below 700 mgrm. per 100 c.c. blood; 25 = 725 mgrm.; 22= 725–750 (the normal limits); and 8 were above this figure. The chloride is low in meningitis, and low-grade chronic meningitis is suspected in many of these cases.

SCOTTISH ASYLUMS PATHOLOGICAL SCHEME.

THIRTY-THIRD ANNUAL REPORT FOR THE YEAR 1929.

(*Abstract.*)

Report of the Board.

The Board would direct special attention to the most important of the publications from the Laboratory during the year, namely, the results of Dr. Reynolds's research on the pathways of infection of the brain from neighbouring foci of infection. All those who are dealing with mental patients will realize the extreme importance of this work in view of recent theories of the causation of mental disorders, and will welcome the knowledge that Dr. Reynolds's thesis has gained for him from the University of Edinburgh the degree of Doctor of Medicine and the rare distinction of a Gold Medal. The Board heartily congratulate Dr. Reynolds on his well-earned honour.

The Board are pleased to report that the Medical Research Council have continued their grant of approximately £200 to the funds for the current year, that the Moray Fund of the University of Edinburgh has granted £20 towards the cost of apparatus, and that, as noted in their last Report, a special grant of £75, of which £40 remains unexpended, has been made by the Carnegie Trust. The Carnegie

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Trust have made an additional special grant to Dr. E. Gilchrist in connection with work done by her in the Laboratory of the Scheme. Apart from those grants the Board report with unanimous gratification and approval that the Medical Research Council have seen fit to signify their high opinion of the value of Dr. Reynolds's work by making him a personal grant of £200 per annum for three years.

The Committee now consists of Dr. R. B. Campbell, *Chairman;* Prof. J. Lorrain Smith, F.R.S., Drs. Buchanan, McRae, Ronaldson, Sir Robert King Stewart, K.B.E., D.L., Dr. Shaw, and Dr. W. D. Chambers, *Honorary Secretary and Treasurer.*

The Report of the Pathologist.

Research.—Several cases of disease of the central nervous system, which have been worked up during the past year, have proved of especial interest. Cases of cerebral neoplasms have occupied attention, and a large amount of material has been collected and studied, illustrating different aspects of "gliosis."

Dr. Elizabeth Gilchrist has been engaged on an experimental study of the relationship of the lymphatic system of the peripheral nerves to the central nervous system. This work is nearing completion, and results which are significant and suggestive will be published in due course.

Dr. J. A. Hannah has been carrying out an experimental study on the degeneration and regeneration of peripheral nerves, and is at present preparing it for publication.

NOTICES BY THE HONORARY LIBRARIAN.

The following journals are circulated from the Library:

American Journal of Psychiatry.
The Psychological Review.
Journal of Neurology and Psychopathology.
L'Encéphale.
International Journal of Psycho-Analysis.
Journal of Abnormal Psychology.
Mental Hygiene.
Journal of Nervous and Mental Diseases.
Revue Neurologique.
Archives of Neurology and Psychiatry.
Journal of Comparative Psychology.

Members are requested to return all long-outstanding books to the Library as soon as possible for the purpose of cataloguing.

Members are invited to make gifts to the Library to assist in building up a historical collection of psychiatric works from the seventeenth century onwards. In selecting books for presentation, members are advised to consult the Hon. Librarian to see what books the Library possesses and those it is desirable it should possess.

The new accommodation for the Library at the B.M.A. House is available for use. There is now ample room for the expansion of the Association's collection of books.

Any communications concerning Books, Journals or Library matters should be addressed "Librarian, Royal Medico-Psychological Association, 19b, Tavistock Square, London, W.C. 1."

Bronze Medal and Prize for 1931.

Dissertations for the Association's Bronze Medal and Prize must be delivered to the Registrar by April 30, 1931.

Divisional Prizes for 1931.

Papers certified as eligible for this competition must be forwarded to the Registrar not later than April 30, 1931.

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Gaskell Medal and Prize.

The following Regulation has been rescinded on the authority of the Annual General Meeting (Wakefield), 1928:

"(3) A thesis based on original research, if of sufficient merit, may be accepted by the examiners in place of either the written or the clinical examination or both."

The examination for the Gaskell Medal and Prize and the examination for the Certificate in Psychological Medicine will be held at the Maudsley Hospital, Denmark Hill, London, in May, 1931.

Applications for entry to each examination to be made to the Registrar, St. Andrew's Hospital, Northampton.

There is no fee for entrance to the Gaskell Prize Examination.

The entrance fee for the examination for the Certificate in Psychological Medicine is three guineas.

The Nursing Badge.

This Badge, founded at the Annual Meeting (Wakefield), July 11, 1928, can now be obtained from the Registrar. The application must be made on a special form and accompanied by 6*s*., which includes the cost of engraving the name and registration number of the holder.

The badge is issued for general use, but especially for occasions when the nursing medal is inconvenient or inappropriate. It is fitted with a brooch-pin for women and a crescent-shaped button-hole stud for men.

For full particulars of the Association's Medals and Prizes and the Certificate in Psychological Medicine see "Year Book" prefacing the January number of the Journal.

NOTICES BY THE GENERAL SECRETARY.

Appointments.

BERRY, R. J. A., M.D., F.R.C.S., F.R.S.E., Professor-Emeritus of Psychiatry in the University of Melbourne, to be Medical Director of the Stoke Park Colony, Stapleton, Bristol.

MCALISTER, W. M., M.B., M.R.C.P.E., to be Physician-Consultant in Psychiatry in the Royal Infirmary, Edinburgh, *vice* Prof. G. M. ROBERTSON, resigned.

PETRIE, A. A. W., M.D., B.S., M.R.C.P.Lond., F.R.C.S.Edin., D.P.M., to be Lecturer on Psychological Medicine, Charing Cross Hospital, London.

POYNDER, E. G. T., M.R.C.P., L.R.C.P., D.P.M., to be Medical Superintendent, Plymouth Mental Hospital, Blackadon, Ivybridge.

The Maudsley Lecture, 1930.

The 11th Maudsley Lecture by Mr. JUSTICE MCCARDIE will be delivered on Thursday, November 20, 1930, in the Great Hall of the British Medical Association House, 19B, Tavistock Square, London, W. 1. Subject: "Truth." [Academic robes optional.]

Notices of Meetings.

Quarterly Meeting.—November 20, 1930, at the British Medical Association House, as above.

South-Eastern Division.—Autumn Meeting at Chiswick House, Pinner, September 25, 1930.

South-Western Division.—October 30, 1930, at the Hants County Mental Hospital, Park Prewett, near Basingstoke.

Northern and Midland Division.—October 30, 1930, at Storthes Hall Mental Hospital, Kirkburton, near Huddersfield.

Irish Division.—July 10, 1930, at the Stewart Institution, Palmerstown, Chapelizod, co. Dublin.

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T. Outterson Wood, Esq., M.D., M.R.C.P., F.R.C.P.E., F.R.C.S.E.

Born April 28, 1843.
Died July 19, 1930.

Ordinary Member since 1869.
President 1905–6.

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THE

JOURNAL OF MENTAL SCIENCE

[*Published by Authority of the Royal Medico-Psychological Association.*]

No. 315 [NEW SERIES No. 279.] OCTOBER, 1930. VOL. LXXVI

THOMAS OUTTERSON WOOD, M.D.DURH., M.R.C.P.LOND., F.R.C.P.E., F.R.C.S.E.

A Memoir by Prof. ERNEST W. WHITE, *C.B.E.*, M.B., M.R.C.P.Lond.

As his oldest surviving friend, and one of 52 years standing, it devolves upon me to write the obituary for the *Journal of Mental Science* of Dr. T. Outterson Wood, President of the Royal Medico-Psychological Association, 1905–6, who died on July 19 last at his residence, Lodore, Chelston, Torquay, in his 88th year.

I propose, first, to deal with his early academic life, thence to proceed to his professional attainments, then to give in detail his great interest in the Royal Medico-Psychological Association, and to conclude with his personal character and work.

Dr. Wood was born at East Rainton, Durham, on April 28, 1843, received his early education at Keppie's Grammar School, Houghton-le-Spring, and it was at first intended that he should join his uncle, Mr. Ferens, who was one of the most successful agricultural pioneers in New Zealand; but his love was for medicine, and so in due course he became one of the early students of the Newcastle-on-Tyne Medical School, where he obtained several prizes and other marks of distinction. From there he went to St. Bartholomew's Hospital, London, and duly qualified as M.R.C.S. Eng. in 1868. He obtained the F.R.C.S.Ed. in 1874, F.R.C.P. Ed. in 1879, M.D.Durh. in 1886, and M.R.C.P.Lond. in 1888. After holding a resident appointment at the Royal Infirmary, Newcastle-on-Tyne, he decided to take up psychiatry as a specialty and became Resident Medical Officer at Dunston Lodge Private Asylum, Newcastle-on-Tyne. This he relinquished to become Assistant Medical Officer at the Kent County Asylum, Barming Heath,

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in 1874. In 1876, on the recommendation of the Commissioners in Lunacy, he was appointed Medical Superintendent of the Isle of Man Asylum, which post he held until 1883, vacating it to start consulting practice in London. His earliest appointment in London was as Physician to the St. George's and St. James's Dispensary, and later on he became Physician to the West End Hospital for Nervous Diseases in Welbeck Street. To both of these institutions he was elected Consulting Physician on his retirement.

During his active professional life in London he took a keen interest in the work of the British Medical Association; was a frequent contributor to the editorial columns of the *British Medical Journal*, and in 1909 was President of the Medico-Psychological Section at the Annual Meeting at Belfast. In 1874 he was Lecturer and Examiner in Psychological Medicine at the Durham University Medical College, and in 1897 President of the Durham University Medical Graduates' Association; and about that time he became a Founder and First Secretary of the Durham University Lodge of Freemasons. His publications related chiefly to Lunacy Law, for which he wrote the sections in Tuke's *Dictionary of Psychological Medicine* and Clifford Allbutt's *System of Medicine*, but his main interest, extending over forty years, was in the Royal Medico-Psychological Association, its evolution and progress. At his death he was its second oldest member (elected in 1869, bracketed with Dr. David Nicolson, *C.B.*), the oldest being Sir James Crichton-Browne (elected in 1863). From 1887 onwards to 1908 he served more or less continuously on the Council, and took an active part in formulating the syllabus for the training by lectures and examinations of mental nurses. He moreover served quite twenty years with me on the Council of the Royal British Nurses' Association, of which Her Royal Highness Princess Christian was President. During this time we were endeavouring to obtain the proper recognition of mental hospital trained nurses.

Dr. Wood's election as President of the Medico-Psychological Association in 1905 occurred through the resignation of the President-Elect, Dr. A. R. Turnbull, Medical Superintendent of the Fife and Kinross Asylum at the Spring Meeting at York in that year. It was Scotland's turn to nominate, but as no nomination was forthcoming at such short notice we elected Dr. Wood, as one of our most active Members of Council. His year of office was a great success. His personality and tact upheld in every way the dignity of the Chair, and his experience as a

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diner-out was of value in arranging and carrying through the Annual and Council Dinners. During his Presidency he sought out and had appended to each name in the list of members the date of admission to membership, and he gave to the Library an album to contain the photographs of the early Chairmen and all the Past Presidents of the Association, nearly all of which he obtained at considerable trouble to himself. Further to show his enthusiasm I may add that it was at his suggestion that I gave the Presidential Badge to the Association in 1904, during my year of office. As he was one of the few remaining mental specialists of his generation, and therefore unknown to many of the readers of this memoir (for he retired from practice in 1915), I must, before concluding, say something of his personal attributes. He was tall, of handsome presence, courtly manners and address, and always scrupulously attired, as the typical physician of the late Victorian and Edwardian periods. His ready wit and his bright, cheery, sympathetic nature appealed to all with whom he came in contact, and secured for him success in practice with a high class *clientèle*. He was interested for many years, with Dr. Henry Rayner, Dr. Stanley Elliot and myself, in two private mental hospitals, Fenstanton, London, S.W. (formerly Dr. Gardiner Hill's) and Bailbrook House, Bath, upon the Boards of Management of which he served until increasing age necessitated his retirement. During this last period, as he was very musical, he attended regularly the concerts at the Pavilion, Torquay, and followed his study of the British Flora, which he had taken up late in life at my suggestion. He was a skilled ornithologist, and knew the habitat, song and call-notes (many of which he could imitate) of most British birds, but it was as a fly-fisher that he most excelled, for he had loved and followed the sport from boyhood. For a good many years we spent a month together fishing the Coquet, the tributaries of the Tweed and the burns of the Cheviots. A better or more interesting companion it would have been impossible to have. During half a century we were bound together by the closest ties of friendship, now, alas, brought to the inevitable close.

He married, in 1870, Charlotte Augusta, youngest daughter of Mr. Edward Potter, of Cramlington House, Northumberland, one of the leading mining engineers of the North. She died in 1907, leaving no issue.

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Part I.—Original Articles.

THE HISTORY AND PROGRESS OF LITTLEMORE HOSPITAL.

THE PRESIDENTIAL ADDRESS AT THE EIGHTY-NINTH ANNUAL MEETING OF THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION HELD AT THE SIR WM. DUNN SCHOOL OF PATHOLOGY, OXFORD, AND DELIVERED ON TUESDAY, JULY 1, 1930.

By THOMAS SAXTY GOOD, *O.B.E.*, M.A.Oxon., M.R.C.S.Eng., L.R.C.P.Lond.,

Medical Superintendent, Oxford County and City Mental Hospital, Littlemore, nr. Oxford; Physician i/c Nervous Disorders Clinic, the Radcliffe County and City Hospital, Oxford; Lecturer in Psychiatry for the Faculty of Medicine, Oxford University.

THIRTY-FIVE years ago this very month, a certain medical man from this city of Oxford came to a doctor's house where I was doing *locum* to borrow a very simple implement, made of rubber tubing with a bulb in the middle, and used for irrigating and cleansing parts of the human tubular system. After this instrument was returned, having refreshed the inner man, being at peace with the world and his patient being also relieved, he entered into conversation as to my future, and suggested that I might care to apply to the then Superintendent of the Mental Hospital for a post therein. I made the application and was successful. To-day, when the Royal Medico-Psychological Association has done me the honour of making me its President, I feel that in my case there is truth in the saying that "There is a tide in the affairs of men which taken at the flood leads on to fortune."

My fortune has placed me where I am to-day. I hope it may also be my fortune not to bore you with this my address, for to tell the truth this has filled me with much apprehension and perturbation, as I have not the pen of a ready writer. I consulted many members as to what I should write, and the reply was—an account of the history and progress of Littlemore Hospital. At the risk of being

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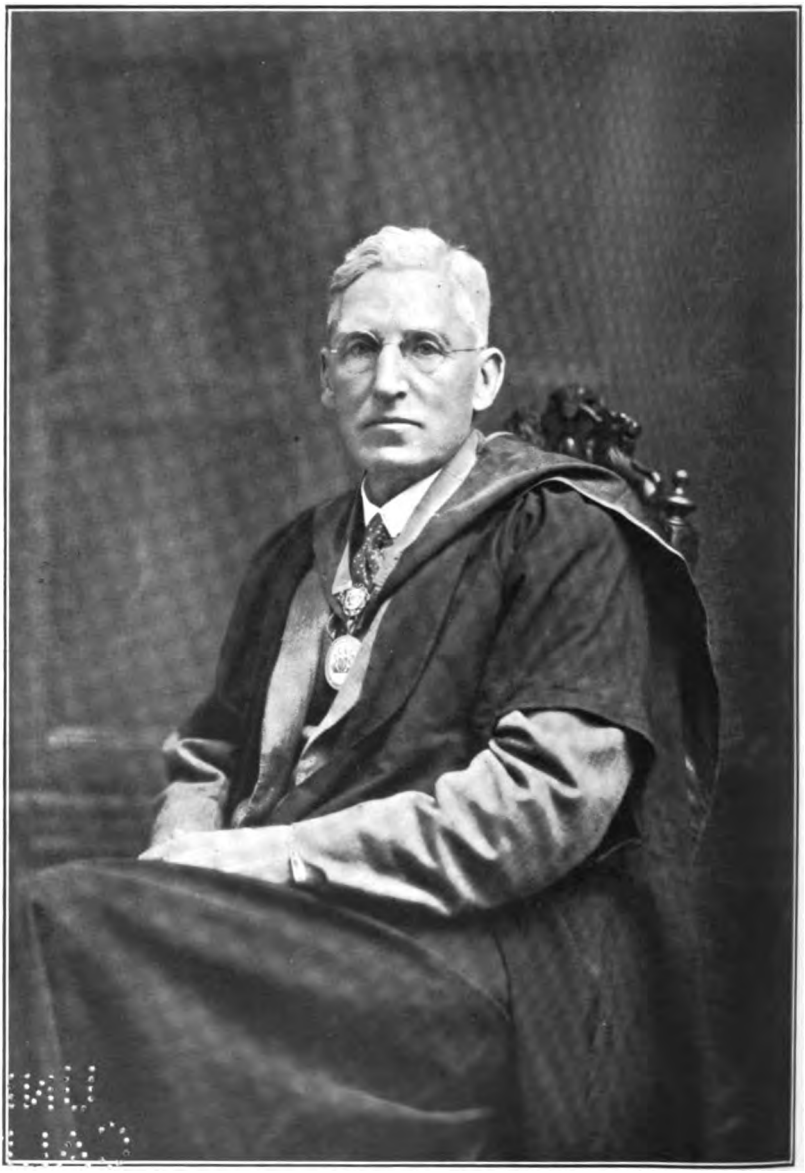

THOMAS SAXTY GOOD, ESQ., *O.B.E.*, M.A., M.R.C.S., L.R.C.P.

President,

1930–31.

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thought very egotistical—for one can hardly write about the work of the hosptial without mentioning oneself—this is my subject.

With this preface of justification I divide my subject into three periods—the hospital before, during and after the war.

On looking over old reports and also on studying a document printed by Samuel Collingwood, Oxford, 1814, entitled "Minutes of Proceedings Relative to a Proposal for Establishing a Lunatick Asylum in the Vicinity of Oxford by Voluntary Contributions under the Sanction and Direction of the Governors of the Radcliffe Infirmary," what struck me most forcibly was the truth of the old adages, "History repeats itself," and "There is nothing new under the sun." Man's imagination plans great things, but hardly ever can he see the fruits of his scheme. It was in 1812 that the imagination of the Governors of the Radcliffe Infirmary planned to provide an "Institution for Lunaticks in the Vicinity of Oxford, such an Institution to be supported by Voluntary Contributions." In 1813 Wain's Act was passed and in 1814 there was a meeting with the magistrates, who decided they could not raise public funds to include pauper patients, so with the subscriptions raised by the Radcliffe Infirmary Governors, a small private hospital was built in 1826 and called the Oxford Lunatic Asylum; in 1828 the name was changed to the Radcliffe Asylum; it is now known as the Warneford, and in 1847 the Warneford House Superintendent was Chairman, as he was then called, of the Medico-Psychological Association. It was not until 1847 that the hospital at Littlemore was opened for patients from Oxfordshire, Berkshire and the Borough of Abingdon, Dr. Ley being the first superintendent. The number of patients was 134, namely, 55 males and 79 females. A few gleanings from the early records may be of interest, as showing that from the first there were members of the staff who were interested in "mind-healing," or, as we more grandly name it to-day, psychotherapy, and also that some of the problems with which we are wrestling to-day were already discussed and puzzled over eighty years ago.

Thus, in the first year, although there was no superintendent's report, there was a long and elaborate one from the Chaplain containing two significant statements, *i.e.*, that he has formed a small library for patients, and that he attributes cures to his ministrations. An extract from his report reads: "July 15th: This morning I read some prayers from the Order of the Visitation of the Sick to A. B—, an Oxfordshire patient. She has always had some very extraordinary delusions, and has refused to have me pray with her, but yesterday she expressed a wish for me to see her this

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morning, which I did before Chapel. She joined in the prayers with apparent seriousness, and seemed much comforted. I prayed with her at 8 o'clock a.m. and she died in less than two hours afterwards."

This devout man seems throughout his period of office to have given evidence of his powers of psychotherapy (though perhaps unconsciously), as is shown by his many reports, and the obvious sympathy and interest he took in the patients till he retired in 1867.

In 1848 Dr. Ley wrote his first report. He remarks that the moral control to which the patients are subjected by experienced attendants has an effect far more beneficial than the restraint of anxious friends on the one hand, or of powerful medicines, counteracted by exciting causes, on the other. He also most emphatically emphazises the fact that patients are labouring under severe and dangerous illness, and advocates earlier treatment. As far back as this time we find attempts to treat and alleviate mental illness by the same methods as we are using to-day.

In 1852 Dr. Ley's report mentions the need for classification, and he stated to the Committee his opinion that the admission of criminals should not be allowed, "as their treatment requires to be more coercive, and more cautious of safe custody, more unremitting and irritating to themselves, the attendants and others."

In this same year and again in 1885 the question of admitting idiots to mental hospitals was discussed, and in the latter year a project for a central hospital for idiots was mooted but rejected.

Throughout the years of Dr. Ley's office he made persistent attempts to better the position of the treatment of all mental illness, never being discouraged apparently, but returning again and again to the question of the need for scientific investigation.

In 1868 Dr. Heurtley Sankey succeeded Dr. Ley. Dr. Sankey's reports show that in 1868 gas was first used in the hospital, and currants were added to the suet puddings and potatoes to the meat pies and puddings. He also remarks that the asylum is very full.

During his period of office the Berkshire patients were removed to Moulsford (1871), and in 1879 the hospital was so full that chronic cases had to be removed to the workhouses. In 1891 the Abingdon patients were removed. Dr. Sankey retired in 1906. Throughout his term of office there is evident a steady upward rise in the number of patients, and old questions return again and again for answer, but there is also a steady tendency to improve. Dr. Sankey was also a great gardener, and by his efforts did much to improve the grounds and, therefore, the environment of the patients.

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I had been working under Dr. Sankey since 1895, and on his retirement I succeeded him.

I was encouraged by my chief to join the Medico-Psychological Association and also the Oxford Medical Society, and it was owing to the encouragement of this latter Society that meetings were held at Littlemore, the first one being under the presidency of Prof. Arthur Thomson. It is mainly thanks to the interest shown and the help and stimulus given by him and Dr. Collier that I owe the position I hold to-day. In fact when I look back at those early days, and consider the support and kindness I then received and have ever since enjoyed, I feel that any small advance I have made in elucidating the problem of mental illness is largely due to the members of the Oxford Medical School.

In 1904 the meeting of the British Medical Association in Oxford gave me a great chance to meet members of our own specialty, and I believe it was after a meeting of the Mental Section, when there was a discussion on heredity and environment, that I first actively started to consider the bearing of environmental influences in the causation of mental disorders. Psychotherapy was at this time to me an unknown word, and my only unconscious attempts at it were in the direction of self-protection and saving myself trouble. Two instances occur to my memory. The first (self-protection) was of a male patient who had on several occasions assaulted me, in fact he attacked me whenever he had an opportunity, saying that I was the devil. This procedure of his frankly became so alarming that one day, when he was secluded in a single room for violence, I took my courage in both hands and saw him alone. He, at first, raved and threatened, saying he would kill me and get rid of the devil by so doing, but, on my suggesting that I had heard that getting rid of one devil might be followed by the advent of seven worse devils, he said he thought he would let me live as, although I was unquestionably unbearable, I was, perhaps, more bearable than seven! I only know that after this episode I had no further violence from this patient, perhaps for the reason that when he said he would let me live I let him out in the ward and so he lost the claustrophobia phantasy. My second attempt was to save myself the trouble of being continually sent for to see a very destructive female patient, who destroyed clothes and furniture without apparent reason and had to be secluded. It became so irksome to me that I attempted to find out why she always manifested this conduct. She eventually told me that it was because she did not like her clothes, or the ward, as she

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considered she was not so well dressed as patients in another ward. She promised to be good if she were dressed like the patients in this ward. The experiment was tried, and she was never, to my knowledge, destructive again. Any tendency that she exhibited in this direction was always checked by the suggestion that she would be returned to her old ward. Both these cases occurred during my first year at Littlemore, but it was not until about 1911 that I thought very much about psychotherapy.

In the early years previous to the war, my main energy in attempting to elucidate the problem of the psychoses had been directed to the effort of finding an explanation through an examination of the brain by histological methods, and trying to correlate the various morbid conditions with the clinical symptoms.

Between 1911 and 1915 I made some tentative attempts to apply analytical methods, but it was not until the war that I made any serious effort in this direction. I treated my first case by analysis in the beginning of 1915. During the earlier part of the war Littlemore Hospital was receiving poor-law patients from Birmingham, which was early taken over as a war hospital.

In 1916 I was associated with Prof. McDougall, who had previously been at " D " Block, Netley, and I am much indebted to him in that he taught me the technique of hypnosis. I was still trying to the best of my ability to analyse the various factors in patients who were suffering from fugues. Especially were my preconceived notions of various morbid mental states upset by the difficulty that one came up against so frequently in diagnosing between so-called epilepsy and hysterical states, cases of hysterical stupor and dementia præcox, and the strange cases of loss of memory. Some patients, unable to speak, would write their experiences, but on regaining their speech would lose the memory; others had memory so reduced that they talked and behaved like children, even as regards feeding and movement; others were even unable to feed themselves, not knowing how to chew or put food in their mouths—reduced in fact to the mental level of a new-born babe. The ordinary methods of therapy had to be abandoned in such cases as these. Suggestive hypnosis could not be used, as that mental faculty called attention could not be revived or influenced by the spoken word. It was, apparently, only direct contact through the sense of touch that could affect their state of auto-hypnosis.

We were forced to form theories and build up a therapy for each individual case. This therapy needed a new phraseology which was

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continually altering; in fact, the phraseology tended to become a jargon, and "complexes," "amnesias" and "dissociation" were everyday words, just as previously we had talked of epilepsy, hysteria, neurasthenia and dementia præcox to designate morbid mental conditions of which we know some of the symptoms generally manifested but not the causes. We certainly had one point of attack, *i.e.*, the illnesses had arisen during the war. The cause usually appeared to be of a psychological rather than a physical nature. For example, it was rare to find a case of so-called shell-shock in a badly wounded soldier, although immobilization of limbs after splinting was more common than in civilian life. The causation being psychological, the treatment was mainly psycho-therapeutic, and at this time we used two types of therapy —the waking or conscious, and the hypnotic. The former included waking suggestions, explanation and re-education, and sometimes electrical stimulation by faradic current. The latter included specific suggestion under hypnosis, the implanting of general ideas of health and peace when the patient was in a hypnotic state, and hypno-analysis, or the regaining of memories in the hypnotic state.

With typical hysterical cases, such as the aphonics, the paretic and other pure conversion types, the first methods were often apparently successful, and would bring about most spectacular recoveries (so-called). The anxiety cases were, however, not so amenable to this form of treatment, but were much more accessible to what we styled hypno-analysis.

In 1916 and 1917 there were not only uncured cases of shell-shock in the hospitals in and around Oxford, but also men who had either been discharged as pensioners or were in various camps, and who still either showed symptoms uncured or had relapsed. Many of these cases McDougall and I began to treat as out-patients, since it appeared to us that they were more susceptible to treatment thus than as in-patients. This out-patient department gave an impetus for starting the Out-Patient Clinic for Nervous Disorders at the Radcliffe Infirmary. It was at the end of 1917 that Prof. McDougall and I were asked to form a clinic at that hospital, which clinic came into official being in April, 1918.

In February, 1918, Littlemore was, with the consent of the Committee, taken over by the War Office as a neurological hospital and called the Ashurst Hospital after its then Chairman. By September it was ready for patients, and the first convoy was then admitted.

Each ward was run as a separate unit, and from the outset a

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discussion was held once a fortnight, when papers were read and cases shown with experimental investigations as to the results of suggestion with and without hypnosis. These experiments traced the effects of suggestion on circulation, temperature and sensation and also on motor activity.

In certain subjects it was found that the suggestion could produce illusions of so vivid a nature that men doubted their own eyes. It was also found that under hypnosis the suggestion of heat produced an hyperæsthetic condition to pin-pricks, whilst the suggestion of cold produced anæsthesia.

In the ward many of the staff used hypnosis as a means of restoring lost memories—in other words hypno-analysis was the commonest form of suggestion used. The memories were regained by persuasion or command, and accompanied by the further suggestion that the buried memories would remain re-associated in consciousness with benefit to the patient. As a result of this type of treatment three effects might occur:

Either the recapture of the buried memory was sufficient to get rid of the symptom.

Or the patient might recover apparently, and relapse by burying the memory again, and would improve only after repeated re-associations under treatment and repeated reactions.

Or the recovery of the memories might have to be reinforced by the further suggestion that it was all over and done with, and that if they were ever troubled by it again they would think of it in the past and not put it in the present.

It should be noticed in passing that there were cases in which hypnosis was not possible. But it is an interesting fact that at this time, *i.e.*, from the middle to the end of the war, and for some little time after, *most* cases appeared susceptible to hypnosis, and, as far as my own experience goes, this applied to civilians as well as soldiers. It may be possible to conceive that, as all classes of the community were under a great emotional stress at this time, the desire for company and mental support was extremely strong and therefore the herd tendencies were reinforced, and transference was more positive, as the instincts with emotional reactions had thrust themselves nearer consciousness than is usual in the ordinary life of the present day. It is also interesting to observe that in cases where the sleep was disturbed by dreams and the waking state by anxiety, often accompanied and reinforced by palsies, phobia, fugues or even stupor, at first the patient was easily hypnotized, whereas as the lost memories were integrated in consciousness,

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the patient became less and less influenced by the hypno-suggestion. I suppose the reason for this is that his own auto-suggestions of health were reinforced in proportion as he regained command and widening of his consciousness. At this time it was not unusual for a medical officer to use as a preliminary step what came to be called collective hypnosis. He would subject seventeen to twenty men to suggestions of sleep, comfort and freedom from worry, the men lying in their beds in a semi-darkened room. The degree of sleep thus induced was often of such a depth that two-thirds of the subjects were impervious to the prick of a pin and also appeared oblivious to their surroundings. This period of hypnoidal tolerance lasted approximately until the beginning of 1919, and, as far as I was able to observe, gradually declined from this period.

Pensioners, who became more numerous from this date, were usually men who had had many forms of treatment, were much more chronic, and in consequence were more difficult to treat. Hypnosis was resented, and suggestion, in the usual sense of the word, had less effect. Analytical technique appeared to give the best results. During the military occupation the cases were, as a rule, mainly psychogenic, few organic nervous diseases being admitted, whereas with the advent of the pensioner the percentage of organic disease increased considerably. The purely military period expired in 1920, and from 1920 until 1922 the hospital was lent to the Ministry of Pensions. The military medical staff was then demobilized, others came under the Ministry of Pensions, and Dr. Davies-Jones remained as my colleague. The general administration of the hospital was not very much changed, but the class of case admitted was much more difficult to treat, for possibly four reasons:

(1) More cases of organic nervous disease were admitted.

(2) There were more cases of psychosis, especially paranoidal states and syphilitic organic reactions.

(3) Anxiety states were more common.

(4) The fact that if they got well the patients had to give up their pensions was certainly a hindrance to recovery, as often this cause was repressed.

It is of some interest to note that during the occupation by the Ministry of Pensions there were very few Oxfordshire cases treated as in-patients in this hopsital, whereas large numbers from Oxford and Oxfordshire were being treated at the Radcliffe Clinic as out-patients. Our experience led us to the conclusion that, as a rule, where no marked organic disability was present cases did better as out-patients than as in-patients.

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I have, until now, dealt almost entirely with the psychological methods employed. Side by side with these, however, physical methods were not neglected. Hydrotherapy, work-therapy and amusements were all being tried, and all the cases were physically examined. During the military occupation all the pathological work for this hospital was done at the 3rd Southern Laboratories. There was also a department in this hospital, under the direction of Prof. Haldane, engaged in experimental work, and investigating the effect of various factors on metabolism generally and respiratory and circulatory phenomena.

Psychotic cases were treated, when at all severe, in a special block, the doors of which were open, as in all other wards. It was our experience that the men, as a general rule, were more orderly and amenable, especially at night, if nursed by women. Wards nursed by male orderlies did not, as a general rule, have the same atmosphere as those nursed by women. Then, again, the women had a double training, and the effect was better than with either psychological or general training alone, although, as far as we could judge, the psychologically trained had more control than the ordinary trained hospital nurses. In this connection our observation also led us to conclude that there are only certain men and women who are really capable of understanding or dealing with neurotic and psychotic patients.

During the Ministry of Pensions occupation we had our own pathologist and pathological laboratory. The principal lines of research were on the cerebro-spinal fluid, especially with reference to colloidal gold reactions. Blood examinations and counts were done in many cases. This work has been continued, and I shall refer to it later. During the occupation by the military and pensioners a certain amount of research was done by using intelligence tests. The scale of Binet and Simon was originally used, but on discussing the matter with Dr. Evans we introduced the Yerkes bridge point scale, which, with certain modifications of our own, is still used in Littlemore Hospital and Oxford generally. It is not in any way claimed that it is perfect, but it has always seemed to us that some unified scale of intelligence test is advisable, as the medical point of view is always qualitative, while the educative point of view is quantitative. The importance of distinguishing an amentia from a dementia is, we think, vital, and in consequence we consider it essential to have a uniform method of determining this point.

I have, until now, attempted, very roughly, to depict the gradual evolution of attempts at treatment and methods of investigation of

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what are usually described as "nervous illnesses" during the war and immediately after. I have suggested how, gradually, it seemed necessary to go deeper and deeper into the psychic life of the individual to effect a cure. It would almost appear that where there is a common emotional stimulus affecting the herd, the instinctive reaction of the individual, namely, fear and its derivative, anxiety, comes to be a mass-feeling, and so treatable by mass-methods. This common factor was present in the war, and so it may account for:

(1) The common reaction to suggestion.

(2) The fact that this common reaction caused by the environmental strain on the instinct of self-preservation reduced all individuals to a level not usually observed in the normal life of our time.

As the war progressed, the individual gradually adjusted to the environmental conditions of the time, and reactions became individual once more. Instead of mass-feelings of fear and anxiety, there were differentiated adaptations or mal-adaptations according to temperament. I think this hypothesis is supported by the fact to which I have already alluded, *viz.*, that as the war progressed more complicated means of treatment had to be adopted, and with the cessation of the common factor there was a tendency for the individual to return to his or her own individual environmental difficulties. The consequence of this was that individual tendencies, either hereditary or environmental, came to have more weight in the consciousness.

The experience gained during the years of the war emphasized the enormous importance of the psychological factor in mental disorders. That the main factor *was* psychological is further emphasized by the fact that although over 4,000 patients were treated in Ashurst Hospital in four years there were only four deaths.

The third and last part of my paper deals with the period from September, 1922, when the hospital was re-opened, to the present time.

This war experience further suggested that it might be possible to run a mental hospital almost entirely on the open-door system, and on the evacuation of Littlemore by the Pensions Ministry, the Committee authorized extensive alterations and improvements to enable the hospital to be run in this manner. This course was also strongly supported by the Board of Control. Structural alterations consisted of demolishing many single rooms and thus enlarging many of the wards. Windows were lowered, and all stops preventing

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windows opening to their full extent were removed, except in two wards on either side; in these, which were intended for very demented or excited patients, the stops were removed from the top half only.

A nurses' home was built. In each ward provision was made for a doctor's room, where patients could be examined both physically and psychologically in private. On the reopening the number of male and female wards was equal, but in a short time it was found that there were so many vacant beds, especially on the male side, that two male wards were occupied by females, and about 200 out-county patients were taken by the Committee. This fact is mentioned, as it seems of some interest that although these boarders were not accustomed to open wards, yet they gave no trouble. As far as my own experience goes, I am convinced that freedom from the restriction of locked doors is conducive to quietness and contentment of the patients. Within the first week we had two escapes through the open windows, but on pointing out to the patients, when recaptured, that it was foolish to escape as we should have to recapture them, but more foolish still to use windows when the doors were open, we have had little further trouble. Certainly some delirious and deluded patients have wandered from the wards, but as regards escapes in the full sense of the word, those that have occurred have been almost entirely from the four wards that are under lock and key. The system of unlocked wards night and day seems, as far as we are able to observe, to be a factor in removing from the patient's mind that restlessness which is so common in people under compulsory confinement. It is, moreover, a suggestion to them that they are to be trusted to assist in their own recovery, and the suggestion is, we think, strengthened by the fact that if they refuse to adjust they are sent to one of the locked wards, being told that they will remain there until they promise to try and obey the rules. In practice we find that this procedure has, on many occasions, appeared to wake the patient to a sense of responsibility and control. Especially is this so in the manic types. Only 18% of men and 19% of women are ever under lock and key.

Within the grounds, many patients roam as they please. Parole outside the grounds is also allowed, and patients on parole are encouraged to take more irresponsible ones for walks. We freely admit that there appears some risk in this latter procedure, but as far as our experience goes this risk is small. With the psychotic patients one has to realize that it is not

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what they really *do* in many cases that deters us from trusting them, but our imaginary apprehensions of what they *may* do. This freedom is extended to the so-called suicidal patients, and we have no suicidal caution cards. The question of suicide is freely discussed with patients who have the tendency. In our experience one of the commonest causes of this tendency is the fear of becoming insane, which in plain words is the fear of being certified. We have so often had both in-patients and out-patients who declare that their attempts on their life have been due to this fear of certification, that we are inclined to believe that if suicide were treated by law as a crime only and not allowed as a fact indicating insanity in a certificate, it might possibly deter many from attempting to take their own lives.

As in our opinion the greatest essential to any hospital's success is the human element, *i.e.*, the staff and the way it fits in and pulls together, the first problem seemed to be how this ideal could be best achieved.

In addition to myself as Medical Superintendent and to the medical officers, the Committee appointed a surgeon, physician and dentist. These gentlemen visit the hospital regularly, and in the case of the physician and surgeon, are also members of the Radcliffe Staff, to which hospital we are glad to say a closer and closer affiliation is taking place. This co-operation of all units in hospital services we feel is the ideal to be aimed at, and is extended in our case at Littlemore not only to direct medical services, but to the various departments, such as kitchen, laundry, stores and offices. These respective departments are so essential to the welfare of a hospital and to the well-being of the patients that they should be in close touch with all other departments. At Littlemore we have tried to achieve this effect by making each unit independent in executive, but interdependent by frequent discussion amongst the various heads of units. As an instance, the departments to which I have just referred are in executive control of the clerk and steward, but he is in touch constantly with the heads of each and every unit, and discussion is the keynote of the policy. In other words, by these discussions every person on the hospital staff has an opportunity of hearing the ideas of others, and therefore perceives the effect not only of his own unit, but of others. In a hospital where we are attempting to understand and treat mental illness, it seems to us obvious that the factor we are dealing with is a dynamic energy not to be understood by physical examination only. We cannot see it any more than we can see electricity. It is, as it were, the quality

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common to every individual, and each mechanism styled an individual has this quality, though maybe a different mechanical perfection. The physical methods of medical research are too well known to need comment, and I hope to show later that they are not neglected; but the testing of the output of dynamic, mental or psychological energy cannot, we maintain, be estimated by physical methods. The method now generally admitted for this test is psychotherapy, and it is this method we use not only in our treatment of our patients, but also, as far as may be, in our dealings with one another as members of a staff. We believe that it is to this psycho-therapeutic investigation, added to our physical techniques, that any success we have achieved as a staff is due. I have previously drawn attention to the fact that before the war we were more or less ignorant of the possibilities of psychotherapy as a means of treatment, and it may be of some interest to draw attention to the following facts:

(1) For five years previous to 1918, *i.e.*, 1911–1915, the average number of patients belonging to the county and city of Oxford was 657. The average since 1922 is 514.

(2) From 1911 to 1915 the admissions were 668. Numbers from 1923 to 1927 were 564.

(3) The general population has increased since 1911. Our death-rate is lower.

This being interpreted may mean that psychotherapy is a method which not only assists, but perhaps is essential, in the treatment of mental illness. We believe further that certain modifications in physical treatment have been affected owing to this theory—we hope to the advantage of our patients and ourselves. To mention some of the most important:

Nursing.—The Matron and Assistant Matron are relieved of all responsibility of the kitchen and laundry administration, though they have full control of all matters appertaining to patients. In consequence the whole of their time is able to be given to nursing requirements and training and lectures. All senior nurses and sisters on both sides as a rule are taught some form of handicraft as part of their training. By this method we have found that the patients are greatly encouraged to learn different handicrafts, as their attachment to the nurse will often induce them to start that nurse's particular craft. Once started they gain interest and persist.

Notes on patients.—Senior nurses are also encouraged to take notes of anything special the patients say or do, and on their behaviour with their friends and relatives. As practically all

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visitors see the patients in their respective wards, much useful information is gained by this procedure, and it often gives a clue which is useful in treatment. It is also a routine for the medical staff to discuss rather fully each case with the senior nurses, all of whom are trained to record blood-pressures by the Tycos instrument. In the acute wards all systolic blood-pressures are recorded daily on the temperature charts, the average of three separate units being charted.

It should be mentioned here that there is an interchange of nurses between the Radcliffe Infirmary and this hospital, and both committees consider it desirable that this procedure should be considered as part of the general training. Even after several years this procedure is still rather in an experimental stage, and is continually having to be altered and adapted, but I believe that this method in time may prove a step in furthering the aim of treating all illness, whether the main symptoms are mental or physical, bringing it under one great scheme of nursing, and doing away with the cleavage that at present exists in our training schemes.

I have gone into the methods of nursing rather fully, as we consider that the nurses should be not only capable of dealing with physical illness, but also able to sympathize with the psychological disposition of the individuals under their care. There appears to us at present to be too great a tendency to group all illnesses into categories, and not to give sufficient attention to the individual sufferers. The ideal would seem to us to be that every nurse should have as part of her training instruction in the psychological as well as the physical aspects of disease, and though at present it may be a far step to this ideal, we feel that the twenty-seven Radcliffe nurses who have been to Littlemore, even though only for one month's training, and the thirteen Littlemore nurses who have, during their training, been at the Radcliffe, are a first step in this direction.

Administration of drugs.—An experimental test as to combination of drugs and flavourings is one of the procedures we use in trying to make everything as palatable as possible to the patient. I might state that valerian and asafœtida are drugs which are now never used with the exception of a triple valerianate pill, where it is possible that the valerian acts as an anti-spasmodic, thus counteracting the astringent action of the iron and zinc on the intestines. An emulsion which is found of some use in cases of constipation where the fæces are dry and friable is, I believe, peculiar to this hospital and should be credited to its dispenser. This emulsion is

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olive oil B.P. 1 drm., emulsified with either oil of lemon, cinnamon or peppermint, miij. As is well known, the crude olive oil is green, nauseous and undrinkable. It is, however, made palatable by the addition of either of the essential oils above mentioned. It is given to patients three times a day with meals, the theory being that it may help to supply a deficiency of fat and of fat-soluble vitamin in the diet of patients who do not take this food readily. As far as we have been able to observe, it is of some value and is well tolerated.

The following list of drugs used during the year will give some indication of the lines upon which we administer drugs. The list contains the amounts of sedative, hypnotic and purgative drugs used at this Hospital during the year 1929:

Sedatives, Narcotics and Hypnotics given to Patients during 1929.

Drug.	Total quantity given.	Maximum dose given.
Morphine hydrochlor.	25 gr.	$\frac{1}{4}$ gr.
Chloral hydras	5$\frac{1}{2}$ oz.	20 gr.
Sulphonal	3$\frac{1}{2}$ oz.	30 gr.
Hyoscinæ hydrobrom.	$\frac{1}{4}$ gr.	$\frac{1}{8}$ gr.
Bromides	84 lb.	$\frac{1}{30}$ drm.
Paraldehyde*	240 lb.	2 drm.

* A considerable quantity of paraldehyde was wasted while experimenting with treatment by the injection method.

Sedative draughts or powders given to patients nightly during 1929: Average, ·48 nightly, or 175 draughts in the year.

Strong purgatives: 12 gr. calomel given during the year. Maximum dose given was 3 gr. (No other strong purgatives have been given.)

Magnesium sulphate given to patients during the year: 16 lb. Maximum dose given, 1 drm.

Calomel, $\frac{1}{4}$-gr. tablets: 9,000 tablets given.

Hydrarg. c̄ cretâ tablets, 1 gr.: 21,000 tablets given. (Usual dose one at bedtime nightly.)

The points which may be of principal interest are:

Fifteen female patients have been on paraldehyde more or less continuously throughout the year. This is 2% of the average daily number resident. No males were continuously under treatment by this drug. One male patient who had paraldehyde is accounted for in the number of patients receiving special draughts at night, the total number of which was 175 for the whole year. An experiment was carried out in certain very severe cases of confusional excitement by injecting paraldehyde subcutaneously. It was found (*a*) that most cases showed no local irritation after the injection of 1 drm.; (*b*) that the action of the drug was rapid;

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(*c*) in two female cases and one male there was some local irritation, followed in one case by sloughing. The injections were only tried in very severe cases, where all other means had been unsuccessful, and we think this procedure may be justified in an extremity.

Bromides were given in 48 % of the male epileptic cases and 38 % of the female epileptics. 46 % of the female epileptic patients treated continuously by bromide had paraldehyde combined with the former.

About two dozen tablets of dial and an equal number of didial have been administered during the year. No other drug of the barbituric group has been administered.

We are inclined to hold the view that in cases where hypnotic or sedative drugs have to be used in cases of marked depression, especially if accompanied by confusion, bromides and the barbituric group are contra-indicated, as they appear to add to the mental confusion; they are only of use in cases of restlessness with excitement. The second point as regards drugs is the practice at Littlemore of dealing with cases of constipation by the use of lavage, followed by the exhibition of small doses of either hyd. c̄ cretâ 1 gr. or calomel $\frac{1}{10}$ or $\frac{1}{8}$ gr. The hyd. c̄ cretâ is administered to those cases who tolerate and like fat as an article of diet, and the calomel is administered to those who do not like or take fat. In non-fat eaters the calomel is frequently combined with the emulsion of olive oil previously alluded to. This treatment, from our experience, appears to give better results than the usual purgative procedure. It has the further advantage that after a time the lavage can be discontinued, and the small doses of hydrarg. c̄ cretâ or calomel are sufficient to keep the bowel excretion normal. It might be mentioned here that the necessity of maintaining their own health by attending to this necessary function is explained to the patients. The advantages of this method appear to be:

(1) The excretory function is restored without further exhausting an already debilitated internal tract.

(2) It is easy for the patient to be instructed as to attending the function on discharge.

(3) It appears to be more likely to result in permanent good habits being formed.

This procedure of attending to loss of intestinal function by lavage appears to serve another purpose, *i.e.*, we have found that patients do not require to be fed forcibly by the œsophageal or nasal tube; neither of these methods has been used in Littlemore for over twenty years; and not only have we found that patients take

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nourishment more readily after lavage, but also that patients transferred from other hospitals who have been artificially fed by the usual methods have taken their food voluntarily when treated by lavage at Littlemore. Occasionally the washing-out of the bowel is not sufficient. In such cases the administration of a small nutrient enema has always been found to supply the necessary stimulation, and the patient has never failed to take nourishment by the mouth within forty-eight hours. The theories which have induced us to adopt this procedure would form the subject-matter of a paper in themselves, and cannot, therefore, be entered into here. The practical point is that these methods, as far as we have been able to observe, are efficacious.

The use of hydrotherapy in cases of confusional excitement is well known. The point of importance in this treatment is in our opinion the blood-pressure. If this is below 120 the bath temperature should be below 103°; if about 120 the bath temperature should be 103° or more. The increase and decrease in bath temperature should, we believe, be approximately 1 degree for every 10 points in blood-pressure above or below the normal for the age of the patient.

The question of the importance of hereditary and environmental causes in the psychoses is a most vexed one, and one that is not likely to be decided without much further research. At the same time it may be permissible to suggest as a possibility that further investigation may show that hereditary somatic peculiarities are not invariably responsible for mental breakdown without strong environmental abnormalities. It is the province of psychology to investigate these environmental factors, and psychotherapy can only be of real use when it at any rate attempts to detect the origin in the mind of the patient of his pathological symptoms. To do this every therapist should explore, and to explore he must analyse, and before he analyses he must, of necessity, possess some power of recognizing the elements that he finds. In other words, physical lesions, either temporary or permanent, of the human mechanism must be dealt with, and elucidated side by side with our psychotherapeutic investigations.

Anthropometric Measurements.

It was this idea that led us to study the work of Kretschmer and others. During the last two years our efforts have been directed to anthropometric measurements, the investigations being on the lines of Wertheimer and Hesketh's publication, 1926. This publication is probably known to many of you. They have dealt with

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certain skeletal measurements of males only, but here we make a point of studying the female measurements as well as the male.

The terminology used by Wertheimer differs slightly from Kretschmer's, but both investigators appear to agree in placing the manic-depressive cases in the low indices group, and those of dementia præcox or schizophrenia in the high indices group.

We have measured, or are in process of measuring, 300 females and nearly 200 males, and we have found the manic type, both male and female, appear in the low indices. The female indices are generally higher than the male by approximately fifty points of difference, but otherwise follow the same rule. The dementia præcox cases occur in the high indices in both sexes.

At the same time the position of the individual concerned in his own family has been investigated, with the idea of ascertaining, if possible, whether this factor has any bearing. In our analysis of 300 females the figures are as follows: In 99 the family position was unknown, leaving therefore 201 families to be investigated; for these the percentages were: only child, 12·9; youngest, 40·2; middle, 25·3; eldest, 21·0.

As families are showing a tendency at present to be more limited in numbers, a further analysis of the 201 families was undertaken, four being the minimum number in a family. Of these families of four and over there were 130 of whom the percentages are as follows: youngest, 40·7; middle, 33·8; eldest, 25·3.

The family position, therefore, appears to have some bearing, the youngest child percentage being high. Also there is an apparent tendency for the D.P.'s to appear mostly in the youngest members of the family.

Pathological Research.

Within the last few years we have extended the scope of routine examinations, and pay particular attention to features which might lend themselves to wider application. *Post-mortem* examinations, carried out with care, go a long way towards directing one's attention to so-called "rare" diseases, which may remain clinically undiagnosed partly owing to the special circumstances with which we have to contend. To quote one example, we met last year with a case of pituitary cachexia, and took the opportunity of describing its unusual features, clinically and anatomically, in the *Lancet*. Intestinal intoxication has more recently been looked upon as a responsible factor in a variety of abnormal mental conditions. Poisonous bodies, such as indole, skatole and phenol, results of the

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putrefaction of protein, are, no doubt, absorbed to a certain extent. Kraepelin quotes abnormalities of indican excretion in epileptic insanity, and indican has been made the subject of many investigations about the metabolism in psychoses. We have followed up the variations in its excretion, not only in individual patients, but in groups, over very prolonged periods, and have drawn some practical conclusions, which, so we believe, have been very useful to us. Amongst 67% of our male admissions and 53·6% of female admissions indican was found to be increased, whereas in 30% and 39·3% respectively it was decreased. On discharge the respective percentages were distinctly altered in favour of increased excretion. In fatal cases a decrease of indican was observed. However, we are not of the opinion that urinary indican is an exact indication of putrefaction in the intestine. We do not feel inclined to lose sight of the problems of general metabolism as affecting the outlook in the causation of mental disease. Blood-sugar estimations have been our trusted guide in thyroid treatment. We have specialized somewhat in the close examination of the cerebro-spinal fluid. The test for the diagnosis of general paralysis from blood-serum examination which Dr. Neumann devised was the outcome of systematic research into the pathogenesis of the disease. He attaches great importance to the theoretical aspects raised, which will be laid before you in the near future. That histology of the brain is one of our constant cares goes without special mention. The important problems which encephalitis lethargica has raised are inseparable from histological investigation, and as far as our restricted material permits, we keep a close check on the lessons taught by clinical observation of the patients.

In conclusion, I have attempted in this address to show the origin and progress of Littlemore, and have tried to show that our efforts in healing our patients have been influenced in all directions by the work of others, some who have preceded us and some our contemporaries. I set myself the task of proving that history repeats itself, and that nothing is new under the sun. That I have a strong leaning towards psychological methods I frankly admit, but I plead in extenuation that even here I am only attempting, however poorly, to understand and do away with "the old magic," and to become more of a physician and less of a magician. Rightly or wrongly I attribute any small success mainly to psychological investigations, which have led me to the following rules and methods of treatment:

(1) The open-door system.

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(2) Always telling the patients where they are, and the reason they have been sent, and that they can get well by telling us their fears and controlling themselves.

(3) All delusions and hallucinations are discussed with the patients and attempts are made to ascertain their origin. In other words, what the patients say is listened to and investigated. It is pointed out to them that others do not hold the same opinions as they do, but that we wish to hear their side and why they think as they do.

(4) They are always told if they are to be moved to any other ward, and the reason of their removal, even if they appear to be too confused to understand.

(5) The fact is pointed out to them that their trouble has generally very deep roots, and that the origin of their trouble can only be found in the past.

(6) As a matter of practice we try all methods, but feel that mental analysis is the most certain, as it reveals to the patient the causes of breakdown, which he can avoid in future.

We would emphasize that whereas our numbers at the mental hospital appear to be dropping, they are increasing at the out-patient clinic. This suggests that prevention is better than cure, and that the method of prevention is psychological investigation and re-education of the as yet unaffected mind!

We feel that whatever views may be held as to the merits of physical treatment and psychotherapy respectively, no one is at present justified in condemning the latter unless he himself has attempted to learn and test the technique on himself. We think that if the doubters could be induced to try this test they would find that, as Shakespeare said—

> "There are more things in heaven and earth, Horatio,
> Than are dreamt of in your philosophy."

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"AFTER-CARE" AND OTHER ASPECTS OF SOCIAL SERVICE AS AN ADJUNCT TO MENTAL TREATMENT.*

By J. R. LORD, *C.B.E.*, M.D., F.R.C.P.E.,

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ALTHOUGH the subject of my short address is named on the agenda "After Care," I am privileged by your chairman to touch upon the activities of social workers generally in regard to the welfare of the mentally afflicted.

As a preliminary there are four things I should like to say:

1. My remarks deal with the subject in respect only of the classes needing public assistance, and not with the well-to-do.

2. My views generally on the prophylactic approach to the problem of the mentally afflicted may be well known to my medical colleagues present, but perhaps not to the lay members of local authorities, though I did recently circulate among them copies of a small work in a blue cover which dealt with this subject. Men absorbed in public affairs have little time to study such publications, and only a few may have done so in this case. So my remarks are mainly addressed to them.

3. The views I express may not be those of the London County Council.

4. I shall use the words "psychiatry" and "psychiatric" a good deal—words covering a number of activities, all of which are directed towards the prevention, amelioration and cure of mental disabilities and disorders. One of these, the social approach to the solution of these problems, is the object of my discourse to-day.

Now the first point I want to make is that "After-Care" is also an important prophylactic measure, for a recurrence of mental disorder is often precipitated by a return to unsuitable homes and conditions of life.

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As I shall point out later, the welfare of cases (discharged from institutional care) at the conclusion of special after-care treatment should be in the hands of social workers and health visitors, all of whom I hope will soon have had sufficient psychiatric training in recognizing the early signs of mental breakdown and know what to do under the circumstances. As my time is short I had better make sure of dealing with the subject allotted to me on the agenda, which I take to be how best to carry out the provisions of the Mental Treatment Act in regard to after-care.

First of all, "What is After-Care?" It should at once be noted that modern "after-care" is a definite part of clinical psychiatry. It has progressed to this position from being originally a purely humanitarian and benevolent activity. Such motives lay behind the Bequest of one Joseph Harrison in 1825, in respect of after-care of patients discharged from Wakefield Mental Hospital, and which was the first of its kind. The same motives actuated Sir William Ellis, of Hanwell, in the part he played in the foundation of the Queen Adelaide Fund in 1836 for the benefit of discharged patients in London and Middlesex.

Clinical and prophylactic notions in after-care took root on the foundation, on June 5, 1879, of the Mental After-Care Association for Female Patients in the drawing-room of Dr. J. C. Bucknill, at 39, Wimpole Street, London. Without detriment to the humane and benevolent aspects, after-care was now urged as a means of preventing relapses. To the finding of suitable homes and occupations for women derelicts from mental institutions was added the conception of after-care treatment in special convalescent homes, some in the country, some by the seaside, a suggestion first made in 1871 by that great pioneer of after-care, the Rev. H. Hawkins, Chaplain to Colney Hatch Asylum.

Modern after-care envisages a great extension of this form of after-care work if the public and the local authorities can be so persuaded of its value as to give it their financial support.

The idea is that the rehabilitation and industrial training, the teaching of new occupations, the remoulding of character and the consolidation of the shattered personality, all begun in the mental hospital, are more likely to be brought to a successful issue in homes specially designed, equipped, administered and situated for these purposes, thus freeing beds in the mental hospitals for new admissions and acute cases. The treatment of mental disorders would thereby be brought parallel with that of physical diseases.

To these homes could also be sent cases needing such treatment

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who have come under observation for threatened mental disorder in mental in- and out-patient departments of general hospitals, but great care should be taken that potential suicides are not sent. We do not want any such setbacks at these homes. This is, as an actual fact, a recent activity (Fore-Care) of the present Mental After-Care Association. So much for institutional after-care work.

Now as to the social and environmental after-care work. It is necessary to differentiate between after-care work of this kind for which special training, knowledge and character are required, and later after-care of a general kind which, under my scheme, would become a part of the work of the more general social worker under public health, educational, public assistance committees and parallel work of voluntary associations, including those devoted to mental deficiency.

It is also necessary to differentiate between such professional after-care workers and mental hospital visitors and their assistants, some of whom should, of course, be fully trained in psychiatric social work.

The differentiation I refer to may thus be stated. The professional after-care worker faces a business proposition. She has to visualize a person whose outlook is towards a very different field to that of a person entering, or who has entered a mental institution.

Something more and different is required of her than sympathy, kindliness, tactfulness, a training in methods of inquiry as to the factors causing mental breakdown, and a thorough knowledge of mental hospital care and treatment, and of the types of mental disorder, for which work a different training and experience and even character qualities are required.

She must have a special knowledge of economic factors of life, a capacity both to persuade and to drive a bargain with employers of labour. Her line of inquiry is the kind of home, its cleanliness and healthiness, the character of the neighbourhood and neighbours, the question of domestic happiness or strife, the habits and earnings of the family and their suitability to take charge of a recently convalescent patient, and a host of other matters, all having for their objective the return of the patient to right surroundings. Her inquiries are pertinent, and her attitude that of one who requires things to be done. She must have business abilities of no mean order and an unusual supply of common-sense if her report is to be of real guidance to those proposing to discharge the patient.

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Nothing but confusion can arise from expecting a person to undertake both these essentially different kinds of social work. For both special training is needed, but on different lines.

So the professional after-care worker, I suggest, must be differentiated from both the highly-trained psychiatric social worker, and all other social workers in the general field of public welfare. Now I am not speaking from mere book knowledge, or information gathered from reports, etc., but from actual experience at Horton, where it has been the practice, since 1925, to obtain an after-care environmental report from the Mental After-Care Association in every case proposed for discharge (with few exceptions), including discharges under Section 79, and those of private patients.

We were, I think, the first mental hospital to take full advantage of the Association's offer to do this work for the mental hospitals. We gladly accepted it because our experience for some years, before the offer was made, was that the Association did this work exceedingly well. It has continued to do so, and though I do not speak on behalf of the Sub-Committee of the Hospital, I may venture to say that the Sub-Committee would find itself seriously handicapped without such aid in considering patients for discharge, so much so that it literally now could not do without it.

As regards the help of hospital visitors and psychiatric social workers in respect of cases on admission, I could speak, if it were possible, with even more confidence. The beginning of this movement in this country was at Horton, where in 1922, the first hospital visitor was appointed, and the fact that the recent Royal Commission was emphatic in recommending it, showed that its members had had before them overwhelming evidence of its value and necessity. Again, I can say we could not do without this assistance.*

But with rare exceptions we keep these two kinds of social work strictly apart, and the hospital social workers hand the after-care needs of their patients to the After-Care Association on leaving hospital either for good or on trial.

There is also a further distinction. Much, if not practically all of the hospital social work is best done by independent and purely voluntary agencies. It is delicate work of a kind which has to combat preconceived notions and prejudices in the homes in regard to mental hospitals. This does not hold good to such an extent in regard to after-care work. Presumably such ignorance and

* This first hospital visitor was found for me by Miss Evelyn Fox and the movement which has spread from Horton as a training centre owes to Miss Fox a debt of gratitude for her assistance.

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prejudice has been dissipated and the local authority is free to subsidize, or even themselves undertake after-care activities.

I now come directly to the carrying out of after-care work within the provisions of the Mental Treatment Act. Having regard to the general considerations I have put forward, my recommendations to the local authorities are as follows:

To regard after-care treatment as best centralized in a national organization which can concentrate on the development of the work throughout the land, can keep in touch with employers everywhere, establish and maintain a variety of convalescent institutions and homes conveniently situated so as to be available for the use of all local authorities, and also give adequate training and experience in case work to social workers whose abilities and character traits render them specially suitable for after-care work.

Following acceptance of this postulate, I think local authorities should:

1. Guarantee an appropriate sum to the After-Care Association, which would wholly or partly support a specially trained after-care worker in the district. The latter would recruit and cooperate with voluntary after-care workers in the same district and act as *liaison* officer between the After-Care Association and all local bodies willing to assist.

2. Make full use of the After-Care Association's institutions wherever they are situated, and encourage the Association to build more and increase their variety to meet the needs of different types of patients. Some institutions should be devoted specially to rehabilitation and training, etc., and such other purposes as I have already mentioned. Local authorities should pay the full maintenance charges of these institutions for each of their patients when so accommodated. There is no legal obstacle to this now.

3. Make an annual *per capita* grant to the Association for the next ten years in respect of each patient so accommodated, to be expended solely on institutional developments, the amount of the grant to be a sum mutually agreed upon by the local authorities and the Association, and to be reassessed at the end of that period.

4. Local authorities, in virtue of this (3), could reasonably claim to be represented on the Council of the After-Care Association.

To avoid the Council thus becoming unwieldy in respect of numbers, the local authorities' interests could be looked after by a limited number of persons nominated by the Ministry of Health.

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These suggestions are made having regard to the terms of Section 3, subsection (*e*), which permits of local authorities combining for the purpose of carrying out anything permissible under this section. Without this permission much of what I have suggested would be impracticable. One after-care worker will be sufficient for smaller local authorities, each of which will thus secure an efficient after-care service on economical terms.

The headquarters of the local after-care officer could well be the out- and in-patient clinic maintained or subsidized by the local authority.

The cost of providing suitable convalescent institutions will be pooled among all the local authorities, which must also prove an economy, even in the case of the largest of them.

I feel that my proposals will not fail to receive serious consideration, and I commend them to this Conference as a basis, at least, from which to proceed.

In dealing with this subject I have so far touched upon the employment in the psychiatric field of two groups of social workers, namely, in regard to persons entering upon psychiatric treatment, and in regard to those leaving it.

It must be understood that my remarks are equally applicable to these two groups of workers in regard to every kind of institution doing mental work, whether a public mental hospital, a special clinic for early cases, or those out-patient departments with some beds preferably attached to general hospitals (voluntary or municipal), which I am anxious to see *inter alia*, placed at the service of those whose treatment does not necessarily come under the provisions of the Mental Treatment or Lunacy Acts. I refer to mild cases of psycho-neuroses, of hypochondriasis, fatigue or apathy, morbid shyness, inferiority feeling, memory hallucinations, feeling of unreality, fears and obsessions, etc., which, if not skilfully treated, become chronic, result in years of suffering and unhappiness, and are productive of a vast amount of avoidable invalidism and inefficiency. Included are those whose mental distress, worry and failure follow upon uncongenial, monotonous, exhausting or nerve-racking occupations and for whom vocational guidance is necessary.

Many of them are a heavy tax on public assistance and the benevolent funds of industries and on employers of labour generally.

Some of them spend years in making the entire round of the departments of a general hospital and derive no benefit therefrom.

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In my opinion such psychiatric departments of general hospitals should also undertake child guidance, and operate as children's clinics, so as to secure the cooperation of other departments of the hospital in this work.

I am now free to touch briefly upon social workers in regard to what I consider the first line of attack on the problem of the occurrence of mental disorder and mental inefficiency, and incidentally of the need in many cases for public assistance.

Children, to the detached observer, are good or bad, or indifferently either, whatever is the parental opinion. Probably most of them are indifferently good or bad. Some, however, are mentally defective, others are dull and backward or difficult, and others still may be either of these, but in addition notoriously bad. In any case children will become the responsible citizens of to-morrow, and the future of humanity depends upon the care taken in their upbringing which is a matter of to-day—especially those who show early failure of adaptability to home and school surroundings.

It must be remembered that, setting aside the frankly defective who cannot fail under modern conditions to receive adequate attention, it is just these dull, backward, difficult, nervous or bad children who, if left to their own resources and not assisted in regard to parental control and home and school conditions, or in other words neglected, misunderstood or inappropriately treated, may become later the source of great trouble and expense to everybody and to the State. On the one hand they may become social misfits, cranks, extremists, eccentrics, anti-this, that and the other, rogues and vagabonds, unemployables, confirmed gamblers or habitual delinquents, or, on the other hand, nervous invalids or mentally afflicted persons—all grave economic losses to the community.

In almost every case the state of these derelicts of civilization is a product of underlying causes extending over many years and commonly originating during a distorted or evil infancy.

As to the remedy: the present brick-and-mortar, statistical, and other unbiological and passive treatment has proved totally inadequate, and I suggest the time has come to replace it by something more biological and dynamic a beginning of which has already been made. This brings me to a group of social workers whose effectiveness in the domain of prophylaxis cannot be doubted.

In regard to child guidance, two problems, the problem of the child and the problem of the parents must be faced, for the

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solution of which somebody must enter the home. To quote a pretty work by Esther Loring Richards, parents frequently forget that " the personality of a child is like a highly-polished mahogany table, prone to take the dust and scratches of all sorts of things in its environment."

Careless, quarrelsome and badly-behaved parents often fail to realize that parental disharmonies, disrespect for religion and the law, biting, sarcastic or angry remarks about persons and things, let alone drunkenness and crime, all have their effects on the growing mind of the child, quite apart from the parents' specific attitude to the child—its longings, its endless questions, its need for sympathy, encouragement and affection.

On the other hand the variety of the indications of maladjustments in the child are amazing, and many of them all too difficult for the parents to tackle alone—hence neglect, with disastrous consequences to the child's future and to the State.

To mention a few: bad habits, such as thumb-sucking, nail-biting, bed-wetting, food fads, self-abuse, etc.; bad behaviour, such as stealing, lying, truancy, cruelty, destructiveness, disodedience, defiance, fire-raising, bragging, showing off, etc.; personality traits, such as over-sensitivity, shyness, pugnacity, seclusiveness, obstinacy, quarrelsomeness, apathy, restlessness, day-dreaming, fear, nervousness, etc. Then there are the problems represented by fits, sleeplessness, night-terrors, headaches, stammering, mental backwardness, etc.

The complexities of modern life accentuate the difficulties of growth and adjustment in child life as they do in the life of the adult. Compulsory school attendance and the attempt to educate children in a uniform pattern have resulted in a host of personality maladjustments with which our Educational Authorities struggle manfully.

So the child-guidance social worker is a necessity not only to many parents, but also to school teachers and school doctors.

The employment of trained social workers in every aspect of child life I venture to suggest is a division of the first line of attack in regard to the social problems which burden you and your finances, including mental inadequacy and disorder.

In this first line is also included the employment of skilled social workers for the prevention of mental breakdown in the adult and the detection of its earliest signs, which brings me to still another group of social workers who I suggest should be an integral part of public assistance.

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This proposed activity I have described elsewhere in the following words:

"The bringing together of the poor and indigent under the direct supervision of a public assistance committee of a local authority made possible by the Local Government Act of 1929, offers an opportunity for establishing fruitful measures in regard to both prophylaxis and early treatment of mental or nervous breakdown. The largely passive *rôle* played by the Poor Law authorities, by merely treating cases brought to them by necessity, should now be changed to an active intervention. The attack should be made by the utilization of trained social workers, who, during their regular visits to the homes of the poor, will encounter cases whose mental state requires immediate attention to avoid a definite breakdown. These public assistance social workers should coordinate those of voluntary agencies capable of assisting in this work. Such workers would, in due course, replace the relieving officers, and bring to bear a skill and training in social work not hitherto concentrated on the prophylaxis in mental disorders and the promotion of positive mental health. The head administrative official of a public assistance committee should be a psychiatrist or a psychiatrically-trained and experienced social worker. The point of this is that though people who seek assistance during times of unemployment due to lock-outs, strikes, economic conditions, etc., may not be the subjects of any mental or nervous disturbance, there is no doubt that the people who habitually seek public assistance are of a subnormal mentality. Left to their own resources they are incapable of facing the difficulties of life and fail in the struggle for existence. Social workers, on their own initiative, might be able to deal with some of the milder cases of mental and nervous exhaustion by appropriate advice; or refer them to their own doctor for recommendation to the mental out-patient department of a voluntary or county general hospital. The social workers would keep case-records, which would be a valuable source of information for the local authorities. Cases which pass from observation units, and from after-care workers on completing rehabilitation, would find in the public assistance social worker a friend to advise and help them in necessity. Those short periods of residence in the observation wards of public institutions—that inflow and outflow of the same cases—would be less, and fewer would ultimately find their way to the public mental hospital or the police court."

These two recent Acts of Parliament, the Local Government Act

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of 1929, and the Mental Treatment Act of 1930, offer you a vista of hope and possibilities of great achievements in a sphere of public welfare in which progress has been in many respects disappointing. Much has been done, in fact I think all has been done, that was possible by past methods and opportunities.

The outlook is better now than it has ever been, and psychiatry has a chance of attaining a first place in preventive medicine—the highest plane of all branches of medical science. If successful, as I feel sure it will be, it will go a long way towards the solution of many social problems costly to individuals, communities and the State.

The utilization to the uttermost of the trained social worker in the manner suggested in my paper is likely, I submit, to be more fruitful and more economical in the long run, than the building and organization of mental hospitals, mainly housing " end-products " of causes many of which are preventable if tackled at the right time, in the right place and by the right methods.

As to how this can be done, I trust I have contributed something, if only a little, towards your enlightenment.

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MENTAL CHANGES IN CARDIAC DISEASE.*

By ALEXANDER GEORGE GIBSON, M.A., B.Sc., M.D., F.R.C.P.,

Physician to the Radcliffe Infirmary; Reader in Morbid Anatomy, University of Oxford.

MENTAL change in cardiac disease, though a rare complication, is a subject that can be properly and usefully discussed at a meeting of psychiatrists at which physicians are asked to take part. For while the physician may be able to assess accurately the physical defect in the circulatory apparatus, he is trained only in a rough-and-ready way to interpret different types of character, and the way in which they react to disease, and is liable to go astray in his interpretation of mental states. There is also this advantage—that in the present state of uncertainty as to the physical basis of mental disease we cannot look at the subject from too many points of view.

The influence of changes in cardiac action on mentality need not be limited to the effects of cardiac deficiency on the circulation in the brain, to variations of blood-pressure, blood velocity, and the consequent alterations in oxygen and carbon dioxide tension in the cerebral tissues; we must be prepared to accept, if proved, secondary effects from changes in glands and other organs disturbed by the same circulatory changes. Our knowledge of the physiology of such circulatory changes as produce alterations in the mind is extremely fragmentary, and related rather to states of consciousness than to mentality. I need only mention in this connection the classical experiments of Kussmaul and Tenner and those of Leonard Hill.

For the purpose of this discussion, however, it is better that the approach should be from the clinical side. Most of us have made observations on patients showing mental symptoms in cardiac disease, and by a winnowing process of discussion there may emerge some facts that will be helpful or important. Certain cardiac conditions are thought to be commonly associated with particular mental states. Pericarditis, for instance, in children

* A paper read at the Annual Meeting, Oxford, July 2, 1930.

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or young adults sometimes produces querulousness and neurasthenia. Angina pectoris, again, is occasionally associated with emotionalism and irritability. The fits of anger to which John Hunter was subject have been so explained. Again, the cardiac death in diphtheria is peculiar and characteristic. Though I have no personal acquaintance with it I believe it is true to say that children who die from cardiac failure in this disease are acutely conscious until the final stupor, that they may be aware of approaching death, and, unless they have somebody to sit by them and talk to them, may suffer agonies of apprehension and fright. The gradual lowering of blood-pressure under similar conditions in older people seldom causes more than a feeling of exhaustion or a desire for sleep. The sense of impending death in angina pectoris is a problem in itself that I think had better be left out of the discussion so as to avoid wordy and unsatisfactory explanations. Aortic regurgitation, again, especially the syphilitic variety, may be associated with impulsive insanity.

The available literature is very restricted and fragmentary, and it is only necessary to refer to it briefly. A clinical study approached from the aspect of psychiatry, by Mickle in the Goulstonian Lectures for 1888 throws considerable light on the behaviour of mental patients as the result of variations in the efficiency of the cardiac mechanism. Some observers have suggested that specific cardiac disorders will produce one of a range of mental states—an hypothesis which is very unlikely and unwarranted except from the study of an enormous number of cases, a study which has yet to be undertaken. T. S. Clouston* spoke of "cyanotic delirium" and "cyanotic insanity" from lack of oxygenation of the blood. This form, seen in bronchitis, cardiac failure and asthma is, according to Clouston, a form of delirium with confusion, hallucinations of sight, sleeplessness, sometimes suicidal impulse and vague fears. The patients are usually worse at night, and often end in mental torpor passing into coma. It is more commonly seen in persons of advanced age than in young people, and would appear to depend on some degree of arterial change, or possibly of inherited disease.

Carey Coombs,† in reviewing his own 2,000 cases of cardiac disease, finds no support for the view that cardiac disease in itself is responsible for mental disorder. He notes the fact that children with rheumatic heart disease are often abnormally quick and mentally active. Coombs found only 10 cases of insanity associated

* *Clinical Lectures on Mental Disease*, 6th edition, London, 1904, p. 363.
† *Journ. Ment. Sci.*, London, 1928, lxxiv, p. 250.

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with rheumatic heart disease. The changes in mentality seen in older persons with cardiac disease he attributes to the effects of senile changes.

In some cases, indeed, the process at work, *e.g.*, syphilis, may affect both heart and brain, and the effect on the brain, rather than on the heart, may be the cause of the mental aberration.

From the psychological side, Riesman* says that cardiac patients are often depressed and irritable, particularly if decompensation is present; that hallucinations of sight and smell are common, especially in aortic disease. He also mentions confusion in regard to time. Some patients alternate between apathy and excitement, and require watching. Others show acute mania which defies control. Our prognosis, Riesman says, is governed by the state of the circulation; if the patient's heart recovers, his psychosis will disappear.

J. L. Van Lier† notes that when a person predisposed to mental disturbance acquires heart disease the character changes and irritability, readiness to anger and anxiety show themselves, and he urges the treatment of the physical defect as a means of overcoming the psychical abnormality.

It is probable that different types of persons with different psychological tendencies react differently to the stress of cardiac disease, and it is possible that the incidence of mental changes in cardiac disease may be very different in different races. If the psychological reactions of the northern nations are compared with those of the Latin races or the Jewish race the probable differences are at once apparent.

Clifford Allbutt, writing in the *Provincial Medical Journal* for 1885 on "Cardiac Delirium," mentioned that he had been unable to find any mention of the condition in medical works of reference. He doubted whether in cardiac failure the mental condition is due to the retardation of venous return. He asserted that in the majority of cases the mental alteration is slight enough to be referred to the whims of a sick person, but that in more severe cases it takes the form of a delusion of place. The patient thinks himself to be in a strange hotel or house, and implores to be taken home. The article was apparently written to draw attention in the main to the phenomenon itself, as no clinical cases are given in detail.

* D. Riesman, *Amer. Journ. Med. Sci.*, Philadelphia, 1921, clxi, p. 157.

† *Nederlandsch Tijdschrift v. Geneeskunde*, Amsterdam, 1925, ii, p. 2661; abstract in *Journ. Amer. Med. Assoc.*, 1926, i, p. 660.

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For the purpose of the discussion I am charged to introduce it will serve better to go to the sources that have been at my disposal: to examine a series of hospital cases with *post-mortems* and to analyse a series of private cases. In hospital cases I include those who have died from cardiac disease or in whom cardiac disease has been found at the *post-mortem*—cases that have, therefore, been verified as having suffered from cardiac disease—but we shall expect amongst them that only the grosser forms of mental disease will be recorded, for in hospital mental changes are often a mere incident. Amongst the private cases there is a possibility of diagnostic error as regards the heart, but the mental state will have been more accurately noted, for not only has it been my habit to record slight changes of character, but there will also be symptoms that would be the subject of comment from the patients' relatives.

There is this, however, to be said in regard to hospital and private patients alike: that they may suffer from the grossest forms of cardiac failure, and may show no mental change beyond that of gradual enfeeblement of mind as well as body. I have notes of cases of ischæmic necrosis of the cardiac muscle in which the left ventricular failure has been extreme and yet the mind has been calm and clear; it is under these circumstances that the patients with a high grade of mentality come out best.

And again my observation is that in congestive cardiac failure we see the same dogged fortitude in hospital and in private patients; it is as if the patient was forced to concentrate on the job of getting his breath, just as one has to do when climbing uphill.

A solicitor, æt. 63, a very vigorous man, had been feeling seedy for two or three weeks; stairs tried him more than usual, and he was, unnaturally for him, disinclined to exert himself. At 9 a.m. one day at his office I found him ashen, apprehensive, but calm, with slight pain in the upper chest. He asked me to be plain with him as to the outlook. The pulse was completely irregular, with intermissions and poor tension. At 3 p.m. on the same day he was a fair colour, the pulse 100, steady and full. The first sound was poor. He had another attack on going upstairs to bed that night. He improved slightly during the next two days. On the morning of the fourth day from the first attack, after a very bad night, his pulse was regular and full, but there was pain in the chest, and he was compelled for relief to stand leaning over a table. His mind was clear and he kept his accustomed equanimity. At 3 a.m. the next morning he had orthopnœa with blueness. The pulse was irregular in tension, the respirations were 24, and there was no œdema. On the sixth day, after a restless night, there was a bout of pain in the chest, and he died as the doctor in attendance was preparing an injection of morphia.

Though in this case the break-up of the cardiac mechanism was violent and rapid, there was never any swerving of the mind from its accustomed path.

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The following tables summarize the cases in which heart disease and mental symptoms were associated:

TABLE I.—153 *Cases of Cardiac Disease in* 2,000 *post-mortems* —7·6%.

	Cases.	Mental.	Percentage
Mitral stenosis	30	5	16·6
Fatty infiltration	26	4	15·3
Various	97	6	6·1
Total	153	15	9·8

Mitral stenosis: Delirium, 4; slurred speech, 1.

Fatty infiltration: Suicide, 2; slowness and confusion, 1; "mental symptoms," 1.

Pericarditis: Mentally peculiar, 1.

Ulcerative streptococcal endocarditis: Delirium, 1.

Aortic insufficiency: Delirium and slurred speech, 1.

Malignant aortic and mitral disease: Mental deterioration, 1 (cerebral hæmorrhage).

Ischæmic necrosis: Mania (delirious, shouting), 1.

Auricular fibrillation (alcohol): Delirious, 1.

TABLE II.—*Mental Symptoms in* 127 *Private Cases.*

	Absent.	Present.	%
Ischæmic necrosis	26 (2)	7 (0)	21·2
Hyperpiesis	15 (5)	1 (1)	6·2
Auricular fibrillation	11 (4)	2 (1)	15·3
Angina pectoris	6 (1)	4 (0)	40·0
Dilatation	16 (3)	5 (0)	23·8
Heart-block	4	4	..
Aortic	5	1	..
Rheumatic fever, mitral	4	3	..
Infective endocarditis	4	1	..
Extra systoles	0	2	..
Aortic stenosis	3	0	..
D.A.H.	1	1	..
Pernicious anæmia	0	1 (1)	..
Total	95	32	

N.B.—Numbers in brackets indicate those with congestive cardiac failure.

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The following table gives the number of times particular mental symptoms have been noted:

Total number of patients, 32.

Major symptoms:	
Cases requiring treatment in a mental hospital	4
Aphasia	2
Hallucination	1
Drug addiction	1
Confusion	4
Hysteria	1
Total	13
Minor symptoms:	
Neurasthenia	13
Irritability	2
Apprehension	1
Emotion	1
Depression	1
Psychasthenia	4
Total	22

TABLE III.—*Mental States in Certain Cardiac Conditions* (Private Cases).

Ischæmic necrosis	7 cases.	Depression.
		Apprehension.
		Hallucination of hearing, wandering (aged 81).
		Wandering.
		Confusion.
		Depression.
		Neurasthenia.
Hyperpiesis	1 case.	Depression.
Auricular fibrillation	2 cases.	Mania, slight hallucinations.
		Neurasthenia.
Angina pectoris	4 „	Depression.
		Irritable.
		Verbal amnesia, neurasthenia (Hebrew).
		Drug addict.

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Dilatation (various)	5 cases	Psychasthenia. Neurasthenia. Asthenia. Confusion. Attempted suicide.
Heart-block . .	4 ,,	Aphasia and incoherence. Wandering. Neurasthenia. Irritability.
Aortic . . .	1 case.	Asylum case (syphilis).
Rheumatic fever .	2 cases.	Hysterical fits. Hospital case, auricular fibrillation.
Mitral disease .	1 case.	Neurasthenia.
Infective endocarditis	1 ,,	Emotional.
Extra systoles .	2 cases.	Apprehension.
Pernicious anæmia	1 case.	Depression.
D.A.H. . .	1 ,,	Depression and psychasthenia.

Illustrative Cases.

Mrs. S—, æt. 56, was sent to me in August, 1929, by Dr. Abraham, of Brightwalton. The history was that she had had a bad heart for several years, though it had not been necessary for her to lie up. In 1915 she had had an operation on the womb without ill-effect. There was no history of rheumatism. On June 25, 1929, she was seen by Dr. Abraham for herpes zoster; this cleared up, but left her very weak owing to loss of sleep. For two weeks previous to my seeing her she had been wandering in her mind and had had hallucinations. She was sent away to some friends in a neighbouring town in the hope of recovering her mental balance. She was there seen by a doctor, who recommended that she should be certified, as her conduct was peculiar. She was then sent home and I was asked to see her.

She was a pale, ill-looking woman, with numerous small veins on the cheeks. She had a somewhat irrational manner, and appeared to be taking no interest in what she was doing. I was not able to detect any mental abnormality that suggested that she ought to be certified, though she was more emotional than normal. She had a difficulty in finding the words proper to her thought, and made occasional mistakes, but she was quite aware of these. Her vocabulary was very restricted. The pulse was 84 beats per minute, very irregular, and the blood-pressure was 110 maximum, 70 minimum. The apex-beat was not obviously farther out to the left than normal, but was very feeble, and the jugular pulse was of the positive variety without visible auricular beats. There was a systolic murmur at the apex and another at the base which could easily be followed to the arteries of the neck. This murmur suggested a stenotic element at the aortic orifice, and it was confirmed by a very slight uprise to the pulse-wave. Nothing was detected in the abdomen, there was no enlargement of liver or spleen and no fluid. There was no œdema and fingers were not clubbed. There had been slight frequency of micturition at night, but the urine was normal. The sigma reaction was also normal.

In view of her fibrillating heart I suggested that though she had been on digitalis previously, the dose ought to be increased to the maximum she could take. This produced not only an immediate benefit to her cardiac condition, but also complete restoration to normal mentality. There were no physical signs of

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nervous disease, and the reaction to the increased dose of digitalis suggests that the heart was the organ mainly at fault.

Elizabeth S—, æt. 69, a patient of Dr. Firth, of Cowley, was admitted to the Radcliffe Infirmary on March 24, 1930. She had been under his care from December, 1929, when he had put her to bed because of a large ulcer on her leg. At this time she had an attack of vomiting lasting some days without any apparent cause. From that time till her admission to hospital she had remained practically bedridden. Her mental state varied very much. Some days she was normal and might sit out for a short time. On others she was slightly confused, "but a more noticeable feature was that she was very slow to understand a question, and took a long time to answer it." When admitted to the infirmary the heart was extremely feeble in its action, and she was judged to be dying from heart failure. She died in three days.

At the *post-mortem* examination the heart was rather larger than normal, 275 grm. as opposed to 253, and showed fatty infiltration. There was evidence also of early congestive cardiac failure in the other organs. From the slight enlargement of the heart it is justifiable to infer that in normal life her blood-pressure had been high. An observation by Dr. Firth in January, 1930, showed that the maximum blood-pressure was only 130. During her period in hospital it was always low.

Mary G—, æt. 48, was admitted to the Radcliffe Infirmary on July 16, 1928. The history was that for twelve months there had been pain in the præcordium, worse in the early morning, and dyspnœa on exertion. There had also been palpitation for three months. She had been getting pale and thinner and had had occasional attacks of faintness. There had been swelling of the legs for one week. There was no history of rheumatism, syphilis or anæmia. On examination she was in an early stage of congestive cardiac failure. The pulse was irregular and the heart was in fibrillation. The blood-pressure was 220 maximum, 95 minimum. The apex-beat was in the fifth space, 4 in. to the left of the mid-line. A systolic murmur was present at this spot. There was œdema of the right lung at the base and the urine contained no albumen. The sigma reaction was negative.

She was treated with benefit by digitalis in full doses, which were gradually lessened. Three days after admission she collapsed during the night. The pulse could not be felt and she was cold and clammy, but she gradually revived under stimulation by injections of "Curschmann." On recovery she refused to take anything by the mouth, her mental condition was unusual, she failed to get any sleep, but lay quiet. Then without warning she sprang out of bed and tried to speak to a neighbouring patient. She was then got on to a chair, where she sat for some time. Suddenly she got up and broke a window by throwing a chair at it. Her violence was with difficulty restrained by morphia and by potassium bromide and chloral, but she slept from 4 a.m. The next day was quiet, but she was excitable and wild in speech in the evening. Morphia gave her a good night and she then had three good days, though with slight returns of her mania. During these days her pulse became much stronger. On July 25 and 26 she complained of feeling muddled in her head and once talked in a strange manner. There was confusion also on July 31. The electrocardiogram showed auricular fibrillation with left ventricular preponderance. She was given a course of strophanthin intravenously from August 9 to 14, and was discharged well on September 1, with no signs of cardiac failure, but with persistent auricular fibrillation.

Harry H—, æt. 63, was admitted to the Radcliffe Infirmary on March 24, 1930, with a self-inflicted wound of the throat. He had been under Dr. Longton, of Oxford, for some months for albuminuria, but there had been no sign of cardiac failure during that period. There had been cyanosis, which had been attributed to emphysema. He had had, however, three attacks of œdema of the legs from which he had recovered. The only mental change noticed was that he had been depressed for a few days before he attempted suicide. He died in Hospital of cardiac failure. At the *post-mortem* there was marked emphysema, arterio-sclerosis and dilatation of the pulmonary arteries, hypertrophy of the right heart and congested (cardiac) organs.

Mrs. L—, æt. 50, was a woman of great energy and good mentality, though a labourer's wife. She showed great stoicism for several months during which she gradually went downhill with auricular fibrillation and congestive cardiac failure. Now and then, when the realization came upon her that things were going ill, she was slightly emotional. Later she became somewhat spiteluf

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to the sister and nurses, demanded more attention and was resentful if she did not get it. She also became ravenous in appetite, though she occasionally made herself sick. She begged for food from visitors.

A Clergyman, æt. 70, had led an extremely active life as a preacher and writer, and had enjoyed good health until August, 1917. He then began to lose strength, to complain of restlessness and loss of sleep; there was also some depression. He was a heavily built man, with raised blood-pressure and hypertrophied heart. Repeated examination of all his systems failed to show any physical alteration that could account for his symptoms. He was able to take his afternoon walk, though not so far as formerly. He had felt the war acutely. Sir William Osler, who saw him with me, thought that general arterio-sclerosis was the most likely cause of his symptoms. A course of strychnine which he suggested was not borne well and was discontinued. For five months the symptoms resisted all medicinal treatment. The one relief he obtained was from the visits of congenial friends. One morning the nurse who looked after him found œdema of his legs This was the beginning of congestive cardiac failure, which became steadily worse till his death in ten days' time. It would appear that the neurasthenic or psychasthenic symptoms were the earliest sign of cardiac failure; unfortunately there were no regular observations made on blood-pressure which might have revealed the mechanism by which the brain suffered in its action.

Richard E—, æt. 62, had never been robust, and had led a somewhat *dilettante* life as a student. I was called to see him one afternoon by his landlord, who complained that he was mentally deranged and ought to be placed in an asylum. I found him sitting in a chair, not having shaved that morning. He was slightly confused and had some difficulty in expressing himself. He looked ill, his pulse was very feeble and irregular, and though there was no congestive failure and no breathlessness or pain, it was obvious that he had a serious cardiac condition, which I took to be ischæmic necrosis following a coronary thrombosis. There was no sign of disease in the central nervous system. He was put to bed and arrangements were made for his nursing, but he never recovered his mental faculties, and died of cardiac failure in a little over a fortnight. A case of coronary thrombosis with delirium was recorded in 1919 by Herrick.*

Beatrice D—, æt. 59, a patient of Dr. Moore, of Watlington, suffered from albuminuria, became mildly maniacal and had ultimately to be certified. She was in the Warneford, where I saw her in an attack of cardiac failure following bronchitis and phlebitis. The cardiac failure was a terminal incident in the disease, but Dr. Neill informs me that her mental state was much worse when her cardiac condition was poor.

The considerations that emerge from this short presentation of the subject are as follows: That no explanation from the cardiological point of view can be given why one patient with a serious cardiac lesion is clear in mind while another shows mental symptoms. It is not always possible to postulate cerebral lesions or degenerative changes. The reason more probably lies in the manner in which patients with specific psychological tendencies react to circulatory and other changes. Mitral stenosis and ischæmic necrosis are more likely than other cardiac lesions to produce mental change. Mental symptoms due to faulty cardiac action tend to improve rapidly if the heart can be restored to normal activity.

One further point emerges, namely, that if we fail to make a physical examination there may be a danger of certifying a patient who ordinarily would not be certified.

* *Journ. Amer. Med. Assoc.*, Chicago, 1919, i, p. 387.

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THE INFLUENCE OF FUNCTIONAL CIRCULATORY DISTURBANCES ON THE CENTRAL NERVOUS SYSTEM.*

By Prof. Dr. W. SPIELMEYER,
München.

IF I may be allowed to speak to you about the importance of functional impediments to the circulation, I would like to do so from the point of view of the anatomist. I shall not speak about the clinical and physiological observations in neuropathology and internal medicine; I want rather to begin with the deductions to which the anatomist is led by his own methods, independent of clinical facts and questions.

I mean to discuss those alterations of the brain which are recognized by pathogenetic analysis as results of disturbances of the circulation. These alterations are not such that we can base a definite diagnosis upon them or delimit a process with exactitude. By these means they can be considered only as results of identical or similar causes, and can be explained in this way on a patho-physiological basis. Anatomy has lately made progress in this direction which may be useful for the understanding of some mental and nervous diseases.

Anatomical investigation shows that a variety of changes can be of circulatory origin, without, however, there being any change in the size of the lumen of the vessel nor any pathological changes in the vessel wall. It can also be proved anatomically that a non-organic obstruction to the circulation may cause a degeneration of the central nervous system—in other words, a disturbance of the circulatory *function* only may produce similar conditions to those which are caused by an organic occlusion of circulation.

The first set of photographs will show you this. The lesions appear the same, and yet one has resulted from a distinctly recognizable occlusion of the vessel, and the other has developed without such

* Paper, illustrated by lantern demonstration, read at the Annual Meeting, Oxford, July 2, 1930.

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an obstruction. In cases of arterio-sclerosis with hypertension, I have long observed that foci of alterations are found not only within the reach of vessels narrowed by the arterio-sclerotic process, but also in parts of the brain which are supplied by intact arteries.

In the first slide one focus is the result of an artery very much narrowed by arterio-sclerosis. In the other the pial vessel belonging to the focus is not altered, and its branches also are normal. On the next slide we see another form of degeneration—a pallor of the cortex extending over several convolutions of the occipital lobe, the acute nervous disease having existed only four days, in a case of arterio-sclerosis with hypertension. This alteration could be explained by no organic abnormality of the blood-flow. In the adjacent photograph the pallor of the cortex is caused by an embolus.

It is not necessary to-day to bring forward fresh proof for these similarities in the effects of organic and of functional alterations in the circulation. To-day it is more important for me to show how from the most varied causes damage, strikingly similar in appearance, can result to the brain.

As a complement to the photographs of arterio-sclerotic dementia with hypertension previously shown, the next slide will show you a softened area in the brain of a youthful patient, with hypertension, without any arterio-sclerosis. The triangular focus which fills the whole width of the cortex proceeds as a widely extended strip into the subcortical white matter. The softening, characterized by destruction of granular cells and by proliferative processes, especially in the mesenchyma, occupies only the marginal zones; the main part of the focus shows only necrotic tissue changes.

The next slide is from an *eclamptic pseudo-uræmia*. Since, according to our experiences, the cerebellum here is very often involved, I am showing a photograph of that structure. It shows the final state of necrobiosis extending over several adjacent lobules.

The next slide is from a case of *eclampsia of pregnancy*. The photograph shows the characteristic focal and streaky discolourations. They conform perfectly to the pictures produced by other causes, but in pathogenetically identical conditions. This can be proved by the following photograph. This picture shows about the same alteration. This is from a case of *eclampsia in whooping-cough*, in which I believe that the lesions described in our Research Institute are due to functional circulatory alterations. I think that the same pathological mechanism acts in all epileptic attacks. As an example of this I bring a picture of a *symptomatic epilepsy* in *infantile cerebral*

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paralysis from my former studies on epilepsy. Here one sees in the cornu Ammonis, at the typical sites—that is, in Sommer's sector and in the end plate—the characteristic nerve-cell defect, just as in other epilepsies. This circumscribed defect is, as I have shown before, identical with that which we found in *coarse substantial obstructions* to the circulation.

Further, I bring only one picture of intoxications. Here the character and spread of the alterations is the same, in spite of the quite different original cause. This preparation is from a case of acute *intoxication by pantopon* (*omnopon*).

The next photograph, finally, demonstrates the essence of the alterations. A man, æt. 63, previously healthy, suddenly became ill with rapidly increasing mental confusion. Some days later he became inactive, drowsy and finally somnolent. The day before his death he had epileptic attacks. The heart and kidneys showed nothing abnormal. The necropsy also showed an intact vascular system. Microscopically there were found widely extended fresh necrobioses, partly in the form of pale spots, partly with beginning phagocytosis and organization.

These are the stated facts. What do they mean? The conclusion is evident that for diagnosis or differential diagnosis these lesions are quite useless. We find the same alteration in a traumatic lesion, CO-intoxication, chloroform narcosis, hypertension, pseudo-uræmia, and after other spasmodic conditions. We see always the same alterations. They vary only according to their age and intensity. When they seemed to be different in their localization, and to have something really typical in them, further experience showed that this was an error.

So these findings are of no value to the definition and classification of disease entities. Their fundamental value rather consists in showing something common to all those diseases ætiologically and clinically so very different; not anatomical forms of diseases, but pathogenetically similar symptom-complexes. The essential nature of these showings is the predominance of central circulatory alterations in brain injuries caused by the most varied noxa, such as trauma, intoxications, infections, hypertension or eclampsia. It can be seen from this how the most disparate injuries by a more or less long chain of causes finally lead to the same pathophysiological process.

From this we may conclude as to what meaning these determinations have in neurological and psychiatric questions. I think they give us an understanding of the essence of these brain alterations.

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And besides, the pathogenetic analysis leads us, through the knowledge of the development of brain conditions, into pathophysiology, and so to the understanding of many clinical symptoms.

We try to make use of the microscopic showings in the interpretation of clinical symptomatology. After all I have said before, this can only be done in co-operation with the clinician. He tells us if focal symptoms of the aforementioned kind are present, such as apoplexies, paresis and fits in youthful hypertonics, in eclampsia, eclamptic intoxications and traumatic conditions. The findings demonstrate the anatomical background of such circumscribed cerebral manifestations. For long we have neglected to consider the fresh necrobioses which appear only as a faint pallor, but many cases of so-called "hemiplegia without anatomical findings" can be explained by these pallors, which are visible only in Nissl preparations. It is the same with general symptoms of cerebral origin—sudden drowsiness and coma, or excitement with anxiety and signs of acute delirium. Such general cerebral symptoms can be in relationship with widespread vasomotor disturbances, which have acted on large parts of the brain-tissue. In most of the cases a special vessel district, as, for instance, the district supplied by the arteria cerebri media, was especially involved on one side. Sometimes the same region on the opposite side also showed some damage, and in a few cases there were alterations in very different vessel districts.

We have also known psychic symptoms, for instance in intoxications, which according to our experience we connected with circulatory damage, but which showed no visible morphological substrate. We must suppose that here the central circulatory disturbances were not yet strong enough to destroy the nervous tissue. To produce visible alterations in the tissue, a certain intensity of circulatory deficiency is needed.

Such cases explain the possibility of a total recovery, and of the disappearance of menacing symptoms.

In morphine intoxication, for instance, these findings are very impressive. Dr. Weimann has demonstrated that this latter acts mainly by disturbances to the circulation, in spite of their being accompanied by direct toxic influences. From the appearance and disappearance of symptoms, as well as from the often observed increase and decrease of their intensity, we can conclude that the angiospasms or stases are varying in degree. This may explain hemiplegia, its varying intensity and its final disappearance, as well as the different degrees of unconsciousness, its increasing into

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coma and its final recovery. The angiospasm and angioparalysis can be followed by a recovery of the vasomotor functions.

I think I need say no more about the connections between clinical symptoms and anatomical statements. I hope I have shown how our anatomical results can be used in clinical questions.

As I have already said, the search for the ætiology of disease processes can only be done in co-operation with the clinician, who sees much better with what other symptoms the vasomotor processes are connected.

There is, in general, no other topic in neurology and psychiatry for which the anatomist is so much in need of the help of the clinician in order to analyse his findings successfully.

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ALZHEIMER'S DISEASE.*

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In 1906 Alzheimer reported the case of a woman, æt. 51, who, in addition to the expression of ideas of suspicion and jealousy, failed mentally to such an extent that she was unable to find her way about her own home. During her hospital residence she was perplexed, disoriented for time and place, and had difficulty in understanding and in expressing her thoughts. There were delirious phases, during which she was hallucinated. Her power of retention was greatly impaired. She showed paraphasia and perseveration. The illness persisted for a period of four and a half years, and at the time of her death she suffered from contractures. The *post-mortem* examination showed a striking alteration of the neurofibrils: "In an otherwise normal cell there appear at first one or more fibrils, which on account of increased thickness and increased stainability stand out prominently. In the further course of the alteration many neighbouring fibrils are similarly affected. These then form thick bundles, which gradually come to the surface of the cell. Finally the nucleus and cell disintegrate, and only a tangled bundle of fibrils remains to indicate the site of a former ganglion cell." In addition, throughout the entire cortex, especially in the outer layers, there were many miliary foci or plaques.

The clinical and histopathological picture described above subsequently became known as "Alzheimer's disease."

Previous to Alzheimer's description, Blocq and Marinesco and Redlich had described the occurrence of plaques which were considered as a form of miliary sclerosis, and as being an indication of a severe clinical process. Since then plaques have been described

* A paper read at the Annual Meeting, Oxford, July 3, 1930.

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as occurring not only in the cortex of psychotic senile patients, but as an accompaniment of normal senility. Thus it was recognized that cases showing, in addition to plaques, the neurofibrillary changes peculiar to Alzheimer's disease, occurred at an earlier period—the pre-senile stage—and were differentiated from senile cases in which plaques alone were the outstanding feature. Naturally, the question arose of the relationship between cases showing the changes peculiar to Alzheimer's disease, and those designated as presbyophrenia. Presbyophrenia has been described as a presenile state showing a retention defect with confabulation—a mental picture similar to that seen in Korsakov's psychosis, but differentiated from it by the absence of any polyneuritic changes. As our clinical experience has increased, it has seemed clear that presbyophrenia and Alzheimer's disease cannot be differentiated. They are part and parcel of the same disease process, presbyophrenia being merely a stage in the development of Alzheimer's disease.

We have not thought it necessary to make an extensive review of the literature, because that has already been done by others. We would, however, take this opportunity of acknowledging our indebtedness to the papers published by Fuller, Tiffany, Lambert, Barrett, Grünthal, Malamud and Lowenberg. Grünthal's report covers a group of 14 cases, most of whom were diagnosed by Kraepelin. In 13 of these cases senile plaques were present as well as the fibrillary changes of Alzheimer. The plaques and fibrillary changes occurred throughout the cortex, but neither the cerebellum nor the basal ganglia were involved. The majority of Grünthal's cases were between fifty-two and sixty-three years of age, and Grünthal described the clinical course as being divided into three stages:

(1) A stage of gradual loss of memory and disturbance in perception, carelessness in work and appearance, place disorientation, weakness or epileptiform attacks, with some loss of words and slurring speech.

(2) Complete disorientation for time, place and person, dulling of comprehension, restlessness at night, inability to read, write, or do simple arithmetical sums.

(3) A stage of extreme irritability, with paraphasia, uncleanliness, stereotyped movements.

Grünthal takes exception to the cases published by Schnitzler, Schaffer, Weimann and Barrett. He believes that all such cases occurring under the age of forty years, and characterized by a

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complicated neurological picture, should be kept apart from those known as Alzheimer's disease.

More recently Malamud and Lowenberg have reported the case of a youth, æt. 15, who at the age of 7 had suffered from scarlet fever, and had shown a consequent lack of mental and physical development. The occurrence of this case, interrupted by a remission of approximately four years' duration, was very atypical, and eventually death occurred from tuberculosis. The histopathological examination revealed miliary plaques and the nerve-cell changes described by Alzheimer, but in addition there was extensive degeneration of the vessels of the villi of the choroid plexus. All such cases, occurring in comparatively young people, are of extreme interest, but we agree with Grünthal that, for the present, it would be much better to keep all cases under the age of 40 years distinct from the more typical group.

While considerable attention has been paid to Alzheimer's disease in German, Italian, French and American literature, British psychiatry has taken little notice of it. It is with the idea of directing more attention to this interesting group of cases that we have thought it of value to publish two cases which have been confirmed by autopsy, and two other cases which clinically seem characteristic.

CASE I.—*A case of profound mental disorder occurring in a middle-aged woman, æt. 57, characterized by a defect of memory, with disorientation and total lack of insight. The progressive course, the serious defects both in the emissive and receptive functions, the dyspraxia and the terminal state of spastic contracture and extreme helplessness are typical of the clinical picture of Alzheimer's disease. This diagnosis was confirmed by the histopathological examination.*

Miss I. C—, æt 57, forewoman in a factory, was admitted to the Glasgow Royal Mental Hospital, Gartnavel, on March 26, 1921.

Her *family history* was negative for nervous or mental disease. She was described as having been a strong, healthy woman, who rose to a position of considerable responsibility as a forewoman in a calico-printing works.

Two years previous to her admission she gave up work owing to incapacity and forgetfulness. It was noticed that her memory and temper were failing, and, in addition, she showed peculiarities of conduct. She insisted that she had made statements when she had not done so. This loss of memory and forgetfulness became increasingly conspicuous. She understood what was said to her, but her power of attention and retention was so defective that in a few minutes she had forgotten what she had been told. Her memory for remote events was better preserved. She made mistakes while dressing, sometimes putting on her underskirt above her dress. Gradually she became duller, lacking in interest, and so unfit to care for herself that mental hospital treatment was necessary.

The medical certificates described her as demented in her conduct and appearance. She did not know the use of common objects, and behaved in a peculiar

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way. Her memory for things that happened from day to day was much impaired; for instance, a few minutes after being told a name she had no idea what it was. Her memory for places and dates was also very defective and incomplete. She was unable to carry out the simplest arithmetical calculations, offering five farthings for a penny. She could not give her own address or spell her name.

On admission to hospital she was pleasant and cooperative and seemed to understand the purpose of the examination. She gave her name correctly, but the wrong address. Simple questions were answered correctly, but principally in monosyllables. Her mood was one of contentment, with lack of appreciation of her seriously disordered state. The most striking defect was in the intellectual field. This defect was characterized by diffuse memory disturbance, affecting both recent and remote events, but especially the former. There was considerable disorientation for time and place. She remembered having come to the hospital in a motor car, but was unable to give the names of those who had accompanied her. Her memory was so poor that she could not give an adequate account of herself. She remembered that she was born in Belfast, but was unable to give the year of her birth—said she was about fifty (57). She was unable to recall the various places where she had been employed. She made foolish mistakes in simple calculations. When talking, she stumbled over words, and at other times showed word amnesia. There was also a degree of paraphasia. She had no insight into her condition.

Physically, she was a well-nourished, middle-aged woman, who was in good general health. Her tendon reflexes were equally exaggerated on both sides, but otherwise there were no special neurological signs.

She cooperated in an aphasia examination, but tired easily. She made mistakes in saying the alphabet, and was unable to repeat the days of the week, the months, the Lord's Prayer, etc. While repeating words spoken to her she made mistakes, for instance, in saying "Go, gone gold," she could not proceed further than "Go." Simple orders were correctly performed, but as soon as the orders became more complicated she failed, *e. g.*, the "three paper" test. She made mistakes in naming objects, even such familiar things as coins. Reading showed numerous errors, *e. g.* "Keniloff" instead of Kenilworth, and this difficulty was constantly repeated. In picking out objects she also made errors, selecting a comb instead of a brush and so on.

In August, 1922, this patient was transferred to the Glasgow District Mental Hospital, Woodilee, and we are greatly indebted to Dr. Carre, the Medical Superintendent, not only for his subsequent notes, but also for preserving the brain, and sending it for examination.

While at Woodilee, she is described as being simple and facile, and as taking no interest in her surroundings. She was easily managed, and for a period of two years was "boarded out." Latterly she became so untidy and dirty in her habits, and was so resistive to all care and attention, that she was returned to the mental hospital at Woodilee.

In the terminal stages she had no realization of her condition, or of where she was, and until the time of her death there was a steady and gradual deterioration. Her habits became degraded; she chattered, muttered and laughed to herself. A number of days before her death on January 7, 1929, she was in a state of extreme dementia, exhibiting spastic contractures.

Post-mortem Summary.

The head only was examined in this case. The dura was very much thickened, presenting the appearance of a chronic pachymeningitis. No gross abnormality of the pia-arachnoid was observed. The blood-vessels at the base of the brain showed patchy atheroma. On removal of the leptomeninges, atrophy was noted in various regions. This was most pronounced in the frontal lobes, and more particularly on the left side. The convolutions in the region of the Sylvian fissure appeared to be smaller

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than normal. This feature also was present in the occipital lobes, and again especially on the left side.

Histological Examination.

Pia mater.—Slight pial thickening was present. In some situations the pia was adherent to the brain. The pial vessels showed thickening of their walls, especially of the middle coat, but no total obliteration of a vessel was seen.

Cortex.—A noteworthy feature in sections stained with hæmalum and eosin was the presence of a band of vacuolation in the region above the layer of large pyramidal cells (layers 2 and 3). This band seemed to be peculiar to the frontal areas. In the occipital and other regions, areas of vacuolation, less localized, and encroaching sometimes on the white matter, were present. The band in the frontal area, however, was so well delimited that it presented a very striking appearance. The blood-vessels did not show any marked alteration in their walls. The choroid plexus appeared to be normal. Abundant corpora amylacea were present, especially in the hippocampal region, where they were seen in great numbers at the margin of the cortex.

With Victoria blue stain there appeared to be no attempt at repair in the vacuolated areas. There had occurred, however, a degree of fibrous neuroglia reaction, most intense in the occipital area, and to a lesser degree in the hippocampal gyri. In the frontal areas the reaction was extremely small. Some degree of subpial felting was present, and in both the fourth and the lateral ventricles a mild degree of ependymitis granularis was observed.

In sections stained with Scharlach R an abnormal amount of fat could be seen in the ganglion cells, and round some of the blood-vessels a perivascular infiltration with fat-granule cells had taken place. With Nissl's stain there appeared to be a great "falling out" of cells in the upper layers of the cortex, although the architecture did not show any great disturbance. The ganglion-cells presented some non-specific alteration of the Nissl bodies, but the Betz-cells were very well preserved.

No notable rarefactions of the myelo-architecture could be observed in the sections stained by Weigert's method.

The most important histological changes were revealed with Bielchowsky's staining method. Abundant typical senile plaques were seen scattered throughout all the cortical areas examined—frontal, pre- and post-Rolandic, parietal, temporal, occipital and hippocampal. These plaques were most abundant in the hippocampal

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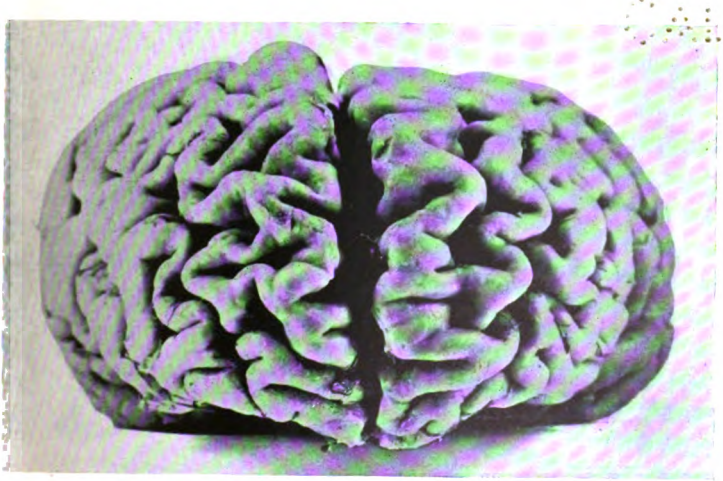
CASE 1.—Showing some atrophy of the gyri and widening of the sulci in the region of the Sylvian fissure.

CASE 2.—Showing atrophy of gyri and widening of the sulci.



CASE 2.—Showing atrophy of gyri and widening of sulci in the frontal regions.

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region, and they appeared to have a preference for the second and third layers of the cortex.

The nerve-cells had undergone profound changes. For the most part these changes took the form of the fibrillary degeneration of Alzheimer. All forms were present, including basket-cells, figures of eight, and the thickened agglutinated fibrillary forms with the shape of a flame, comma, crescent or triangle. All parts of the cortex were affected. In the hippocampal region the greater proportion of the nerve-cells were affected by this degeneration, and most striking was the appearance of the groups of cells in the plexiform layer, where the cells showed exceedingly thick fibrils. In the other regions of the cortex the Alzheimer change seemed to affect the small and medium-sized pyramidal cells. The large pyramidal cells showed a more or less normal appearance.

Other ganglion-cells showed another form of degenerative change of the neuro-fibrils, which conformed to the description of the "granulo-vacuolar" degeneration of Simchowicz, where "the cell protoplasm shows one or more confluent vacuoles of varying shape containing granules of various size often isolated. Often the nucleus is pushed to the periphery.

These cell changes had occurred in the neighbourhood of senile plaques, and were present also independently of plaques.

Basal ganglia.—No plaques were noted. The cells of the globus pallidus showed a "granular" change. In the caudate nucleus scanty small plaques could be distinguished. Some cells had undergone Alzheimer's fibrillary change, others presented a granular condition of the neurofibrils. The cells of the red nucleus also participated in these degenerations. The cerebellum showed no abnormality.

CASE 2.—*A married woman, æt. 54, who for several years had suffered from memory defect, on the basis of which delusions of persecution developed. Later she showed emotional instability, complete disorientation, word amnesia and paraphasia. An aphasia examination revealed defects in all fields. The course, extending over a period of six years, was one of progressive mental and physical deterioration, resulting in complete incapacity. The terminal state was characterized by generalized muscular twitchings. The case was confirmed by autopsy.*

Mrs. M. G. B—, æt. 54, nurse, was admitted to the Glasgow Royal Mental Hospital, Gartnavel, on August 30, 1921.

The *family history* was negative for nervous or mental disease.

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Personal history.—The patient was described as a bright, sociable woman, but quick tempered and irritable. She was determined and obstinate. She married when 25 years old, but before the birth of her only child was divorced from her husband because of his drunkenness and infidelity. After her divorce she became an efficient and successful maternity nurse.

Onset of illness.—Several years previous to her admission, her memory began to fail, and during the last two years this failure had become accentuated. She forgot where she placed things, accused people of stealing her property, and reported supposed thefts to the police. She hoarded her belongings in dressing-cases and drawers. She became suspicious of those with whom she was closely associated, and finally she was so impossible to deal with that care and treatment in a mental hospital was imperative.

The medical certificates stated that the patient accused people of stealing her handkerchiefs and said that they were returned to her through the wall of her bedroom. The police inspector at P— stated that the patient called repeatedly at the police station and said that everyone was stealing from her. She constantly repeated her statements.

On admission the patient was a healthy-looking woman, who seemed much younger than her years. Her blood-pressure was 90. Her tendon reflexes were unequal, the left knee-jerk being increased and the right diminished. Apart from this there were no neurological signs.

Mentally, she was not able to cooperate satisfactorily in an examination. She recognized the institution as a hospital, but did not know where it was situated, and wondered if it might be a maternity hospital. She did not know the day, month or year, and while being asked these questions showed perseveration: for instance, when asked what month it was, she replied "September," and when asked the year, said, "No, it is September; no, it is August"; usually she repeated the question before replying. Her loss of memory was distressing to her, and she became perturbed and irritable when questioned. She said, "I don't understand why people are worrying about me. I have some difficulty in finding my words; sometimes the word comes to me just at once, sometimes I cannot get it." She could not tell how long she had been troubled in this way, but took refuge in vague statements, such as "A good long while." She said she understood everything that was said to her, but her difficulty was in getting a phrase to reply. Her memory for remote events was also seriously involved. She did not know how old she was, when born, how old when married, etc. When asked whether she had any children, she replied, "Oh, no, its Mr. R— has the children. Yes, my own daughter—I remember now. Just for the moment I did not know." She could not tell her daughter's age. When asked her own name, she gave her maiden name. She could not state whether she had become a nurse before her marriage or afterwards. She complained of being depressed, and wept at times; at other times she was taciturn. No delusions or hallucinations could be elicited. Her grasp of school and general knowledge was greatly impaired. She could not say the alphabet correctly. She made mistakes in counting backwards from 20 to 1, and while doing this test she showed considerable perseveration. She could not mention the days of the week, the months of the year, rivers in Scotland, or when the Great War began. In reading short stories she made numerous mistakes, and she was unable to give the gist of the story afterwards.

An aphasia examination was made. Her hearing was unimpaired, her vision was satisfactory. The patient was right-handed. She showed a striking word-amnesia. The defect was not constant, but varied from moment to moment; a word "coming through" at one time would be forgotten a moment afterwards. There was marked echolalia, perseveration and paraphasia. The writing test revealed defects parallel to those obtained with the tests for speech defects. When asked to say the Lord's Prayer, she started by saying, "The Lord's my Shepherd," and when the question was repeated, she said, "Oh, that's not it." She then started correctly, but could not complete it. Her spelling was defective; ordinary words of two syllables were spelt correctly, but compound words like "threepence" had to be given in two parts. Long words she could not spell at all. Her repetition of words and sentences was fairly accurate: words like "Third Riding Artillery Brigade," and short phrases, were usually correctly repeated. She could not compose words spelt to her beyond two syllables. The reaction to words heard was normal. She picked up objects correctly from a

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selection placed before her. She was able to recognize things heard, the jingling of keys, the tick of a watch, and so on. She showed a certain defect in the recognition of things smelled, but named things tasted. Symbols and signs were not understood.

Writing from dictation showed an inability to write certain letters. Perseveration was present in this. She often left out letters and syllables, and sometimes showed a paragraphia. There was considerable dyspraxia, but she was able to copy actions shown her.

During the course of her residence she came to recognize that she was in a mental hospital. She complained bitterly about this, but at the same time she was able to accommodate herself, and for a short period was employed in the laundry.

In 1924 she is noted as having deteriorated considerably. She had become untidy in her habits, was extremely incoherent in her speech and completely disoriented for time and place and person. The irritable state mentioned previously had been replaced by one of contentment and happiness. A gradual progressive decline continued, and her general appearance and conduct were more suggestive of an old lady than of a person sixty years old. In 1927 she was muttering nothing but a mass of incoherent phrases, and all attempts at an examination were futile. In the latter part of 1927 she became bedridden. In February, 1928, twitching of the muscles of both sides of the face, the right leg and both arms was noticed. The right leg and both arms were held stiff, and pain was elicited on movement. The hands were held tightly clenched, the elbows were bent at an acute angle, and the right knee was also bent. The twitching affected all the muscles at different times in the parts mentioned. The right hand was clenched tighter than the left, and was cyanosed. There was incontinence of bladder and bowels, and on the 11th of May, 1928, she died. Her hospital residence had extended over a period of 6 years and 9 months.

Post-Mortem Summary.

The body was that of an emaciated woman, whose appearance was that of at least 70 years. The ribs were somewhat fragile. The heart was small, the valves normal, and the coronary arteries healthy. There was pneumonic consolidation of the right upper lobe, with commencing consolidation of the left lower lobe. The left pleura was adherent to the diaphragm, and to the chest-wall at the level of the sixth rib. The aorta showed slight atheromatous changes. The spleen was soft, otherwise the abdominal organs showed no abnormality

The dura was adherent to the skull. The meninges were normal, except for some congestion of the blood-vessels. Œdema of the brain was present. No marked atheroma of the arteries was noted,

The brain showed intense atrophy of the convolutions, especially of the frontal lobes, where the sulci were markedly widened. The pre- and post-Rolandic areas were well developed. The occipital convolutions were relatively small, but showed no atrophy. On removal of the pia-arachnoid, the convolutions, especially in the frontal areas, had a moth-eaten appearance. On section some degree of vessel congestion was observed, and a moderate degree of internal hydrocephalus was present.

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Histological Examination.

The pia-arachnoid showed some proliferation, which varied in different areas, that of the frontal region being marked, while that of the occipital area was slight. The walls of the pial vessels had undergone degenerative changes, the middle coat being much thickened. This was most pronounced in the frontal area.

Cortex.—The band of vacuolation noted in the frontal gyri of Case 1 was also present in this case, and equally well marked. Other areas of vacuolation were present throughout the cortex, and in Ammon's horn the vacuolation had again taken the form of a band in this area running along the plexiform layer of the gyrus. The blood-vessels in these areas showed proliferation of their walls, and were very congested.

The choroid plexus was normal. Abundant corpora amylacea were present, but were not so numerous as in Case 1.

With toluidin blue there appeared to be a diminution in the number of cells of the cortex, especially in the frontal regions, where the architecture was to some extent deranged. Here the large pyramidal cells stood out well-stained in comparison with the other more poorly-staining layers. The Betz-cells appeared to be normal.

With Victoria blue no increase of fibrous glia was noted, although an increase in the number of small glia-cells was present. A degree of subpial felting and some granular ependymitis were also present in this case.

The increase of fat in the ganglion-cells noted in Case 1 in sections stained by Scharlach R was much more prominent in Case 2, and perivascular infiltration of the vessels of the cortex with "fat-granule cells" was a noteworthy feature. There appeared to be some rarefaction of the myelo-architecture in sections stained by Weigert's method.

Sections stained by Bielchowsky's method showed senile plaques in great numbers. These were abundant in the frontal, occipital and hippocampal gyri, and few in the Rolandic areas. The Betz cells were well preserved. Alzheimer's cells in all their forms could be seen in all parts of the cortex, but a large proportion showed the granulo-vacuolar appearance of their protoplasm described in Case 1. These could be seen interspersed with Alzheimer's cells. In the pre- and post-central and occipital gyri few Alzheimer or "granular" cells could be seen.

It is to be noted also that in the cortical regions the plaques were most abundant in the upper layers, and that the various

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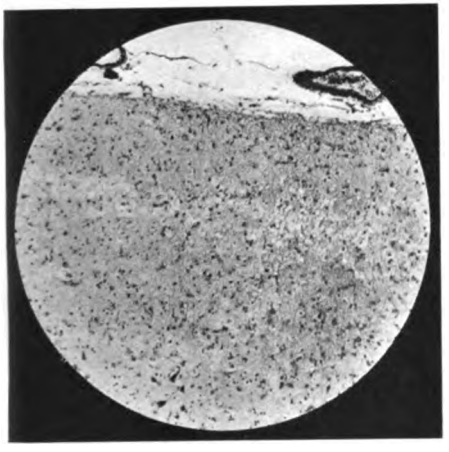
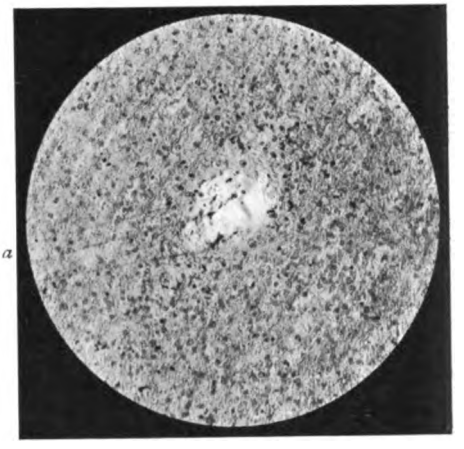
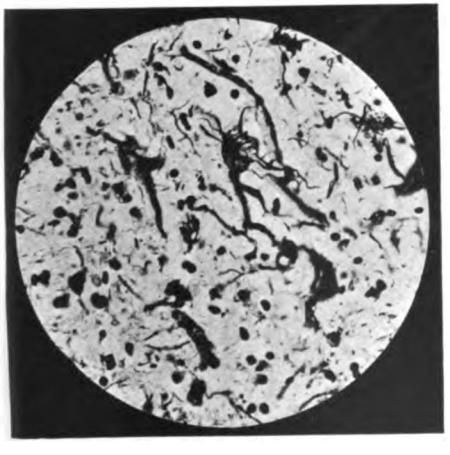


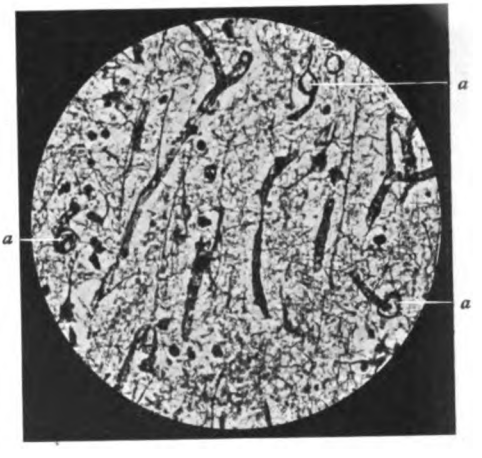
CASE 2.—Band of vacuolation in frontal cortex. (Hæmaulum and eosin.)



CASE 2.—Perivascular infiltration with (*a*) "fat-granule" cells in frontal cortex. (Sharlach R and acid hæmatoxylin.)



CASE 2.—Cells in plexiform layer of Ammon's horn. (Bielchowsky stain.)



CASE 1.—Parietal cortex. (*a*) Showing Alzheimer cell degeneration.

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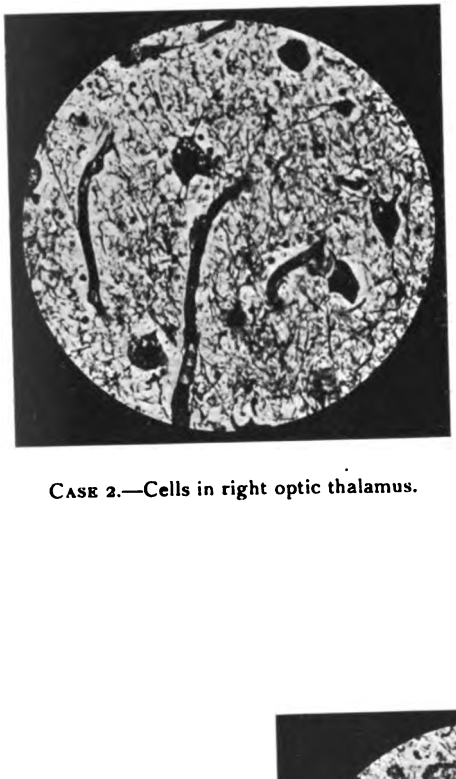
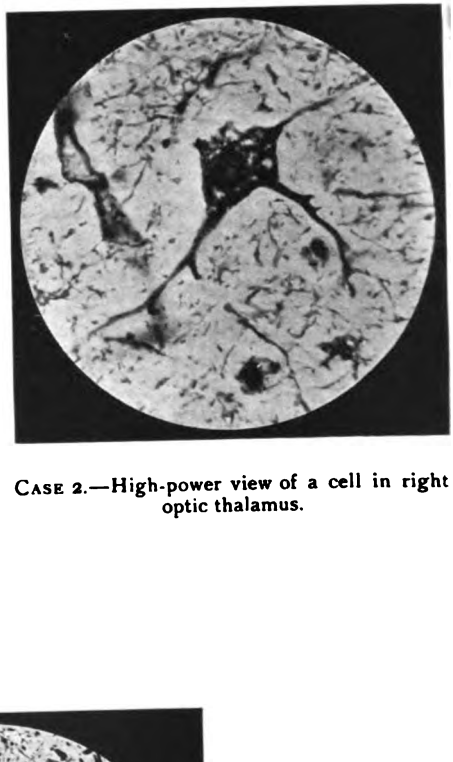
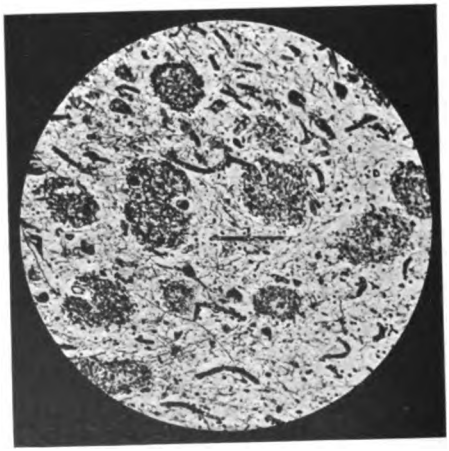


CASE 2.—Cells in right optic thalamus.



CASE 2.—High-power view of a cell in right optic thalamus.



CASE 1.—Senile plaques in Ammon's horn.

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degenerative changes occurred for the most part in the small and medium-sized pyramidal cells.

The cornu ammonis showed typical and abundant Alzheimer's cells—the most prominent form being that of thickened agglutinated fibrils, like bundles of wire. Senile plaques were very numerous in this area.

The basal ganglia showed noteworthy changes. The cells in the caudate nucleus, lenticular nucleus, globus pallidus and optic thalamus had undergone degenerative changes of varying degree and of the granulo-vacuolar type. The cells of the optic thalamus, because of their size and distance between each other, lent themselves admirably for detailed study. The greater proportion of the cells showed change similar to that described by Simchowicz. The fibrils appeared firstly to have become thickened, then so arranged as to give a honey-comb appearance of the cell. Later the fibrillary network became broken up into granules, the cell still retaining its processes and outline. At a later stage there was seen a darkly staining nucleus surrounded by a granular protoplasm, the processes being lost. Still later the nucleus dropped out, and all that remained of the cell was a collection of granules, distinguishable from their background by their deeply staining quality. This change, which conforms to Simchowicz's description, occurred in practically all areas of the brain examined, and in the spinal cord it was present in a marked degree. Simchowicz states that this change is closely allied to the cell-lesion of Alzheimer, but says that true granulo-vacuolar degeneration is only present in the pyramidal cells of Ammon's horn. Alzheimer's cells could be seen in these areas, but were few in number.

The cerebellum showed no plaques, and the ganglion-cells had undergone only slight changes.

In the cortex especially, the blood-vessels had a very hyperchromatic quality in sections stained by the silver impregnation method.

CASE 3.—*A married woman, æt. 56, who for a period of three years had been becoming forgetful, disoriented in all fields, and incapable of carrying out her ordinary duties. Later there was a phase resembling a delirium, which never completely resolved. There has been gradual physical and mental deterioration, along with paraphasia, perseveration, word-amnesia and dyspraxia.*

Mrs. K. K— or R—, æt. 56, was admitted to the Glasgow Royal Mental Hospital on March 19, 1930.

Family history was negative for nervous or mental disease.

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Personal history.—She was described as a healthy child, who had been exceptionally clever. She had worked as a clerk in a law office until the time of her marriage in 1900. She lived a quiet, happy life. The only incident of note in her history is to the effect that about eighteen years previous to her admission a neighbour had some kind of seizure while she was in the patient's garden, and this acted as a tremendous shock, so much so that the patient was for a few weeks in a nursing home. She made an excellent recovery, was active, interested and healthy.

Her *personality* was that of a methodical, conscientious wife and mother, who interested herself very much in everything pertaining to the happiness of her family.

Present illness.—In September, 1927, the patient had a great deal of anxiety in nursing her husband, who was ill with pleurisy, and it was noticed that she became forgetful, and had little appreciation of time. A gradual, progressive change took place. She did not know what day it was, talked of the members of her family as if they were still children, and it seemed as if she did not recognize them accurately. Her methodical habits had undergone a complete change, she was forgetful and confused, so much so that she would turn on the gas and not light it. She was restless at night time. Her former efficiency disappeared, *e.g.*, she was unable to do her shopping as she forgot her messages; she seemed unable to get the words she wanted to say, but there never was any indication of a stroke, nor complaints of giddiness. Later on she complained of headache, as if there was a band round her head. On December 17, 1928, her daughter was called home from her work, and on arriving found a smell of gas in the house. The patient was found going about with a lit lamp, and had been unable to find her way back to her room. She insisted that there were strange people in the house, and could not be convinced otherwise. She failed to recognize her husband, saying "Which of my uncles are you?" and asked him if he were going to Liverpool. She was apprehensive, as if she were hearing voices; she was suspicious, accused the family of being against her, and in addition her mental confusion was so pronounced that she was unable to dress herself correctly.

On January 30, 1929, one of us saw her in consultation in a private nursing home. She had little appreciation of time or place, and greeted me as an old friend, saying that she had known me quite well, whereas we were complete strangers. Her power of retention was so poor that in a minute or two she had forgotten what had been told her. She confabulated, described visual hallucinations, but said that she did not feel frightened.

Her tongue and skin were dry, her tendon reflexes were greatly exaggerated, amounting to a clonus when her knee-jerks were elicited. There was no evidence of any focal symptoms, but the condition seemed to be a delirious state, probably due to some toxic focus.

Later she was admitted to another nursing home, where the significance of her illness became more apparent. She was under observation for a period of approximately three months, and during that time no appreciable change took place in her condition. She never gained an accurate appreciation of time or place, had difficulty in naming things, used words in a peculiar way, had difficulty in finding the right words, and showed paraphasia and perseveration. The clinical state was typical of Alzheimer's disease.

Gradually the patient's condition became more aggravated, and when seen again on March 19, 1930, a further change had taken place. She still had no idea of time or place, or those around her; she called her daughter by a wrong name and referred to her son as "Daddy." She had become childlike, expressed vague suspicions, seemed depressed and frightened, saw reflections in mirrors, and talked constantly as if there were people about when no one was present. She complained of headache and backache, but there was no complaint of giddiness. She had been becoming more stiff and feeble in her movements, but there had been no indication of a stroke. At meal-times she frequently mixed up the articles which she wished to use, using a spoon when she should be using a fork. In every way she was much more enfeebled; she used peculiar words, and she was so obviously unable to care for herself that she was admitted to the Glasgow Royal Mental Hospital.

Physically she was a slightly built, rather frail lady of 56 years. Her pupils reacted briskly to light and accommodation, her visual acuity was good, her

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hearing was good. There was a tremor of her facial muscles and tongue. The limbs showed a slight degree of spasticity, with a general exaggeration of all her tendon reflexes. Her blood-pressure was 160/120. Her pulse was 80.

Mental examination.—On admission she sat quietly in the reception-room. When spoken to she answered at once, with a slight smile, but her reply bore no relation to the question. She did as she was told. The following questions and answers give a good idea of her condition:

What is your full name? "No, that is the wrong way, and it always moves a bit. He was here when I was going to school at Calder Street."

When did you come here? "That's the bit I can't get just, but it will come. K— K— G—yes, yes. But it was cleaner in those old days than it is now. If you could give me a big bit to put together quick. I have never thought of having anything done."

Are you married? "Not again."

Question repeated. "Yes,—R—."

How long married? "This one here" (touching her ribbon).

The above sample shows the disjointed character of her conversation. There were times when she was quite unintelligible; there were other times when she had great difficulty in getting the word she wanted to say. She showed a certain amount of perseveration, *e.g.*, shown a pencil, and asked what it was, she replied, "A pencil"; when shown a handkerchief she called it a pencil. She could not say the days of the week or the months of the year, or count up to twenty. She could repeat single words, and groups of words like "It is a good day," but anything more complicated she was unable to repeat. Attempts were made to get her to read, but she complained that she was unable to do so. She was unable to read even the simplest commands, and made no attempt to execute written demands. Her attempts at writing were illegible—she merely scrawled on the paper and could not complete a word.

A further examination was made on May 17, 1930. She was unable to tell her name, but said, "Katherine is my middle name, but I think you could get as much out of it as R—'s tea tables a bit." Her face was noted as lacking expression; she spoke with a good deal of over-action of the muscles of the lower part of the face. She was very emotional and tearful, seeming to realize her condition. Further attempts were made to get her to understand written commands, but to no purpose; even when her name was written out fully in front of her she did not understand that this was her name.

A further physical examination showed marked tremor of the lower facial muscles. Her reflexes were noted as being greatly exaggerated, and the plantar response on both sides was equivocal.

A cerebro-spinal fluid examination showed no increase of cells, and Pandy, Ross-Jones, Wassermann and gold-sol tests were all negative.

CASE 4.—*A married woman, æt. 60, who for two years had shown a failure of memory, followed by a state of placidity and lack of interest, then a suspicious hallucinatory phase, akin to delirium. Her condition is now characterized by a variable, emotional state, accompanied by paraphasia, word-amnesia, and difficulty in understanding spoken speech.*

Mrs. E. S— or S—, æt. 60, was admitted to Glasgow Royal Mental Hospital on November 15, 1929.

Family history.—One brother had died from a cerebral seizure when he was sixty years old. An older sister died in a mental hospital in South Africa.

Personal history.—The patient is described as an ordinary child who developed normally. She trained as a nurse. She was very fond of her work, and had been matron of a small hospital for five years when she married. Her married life was happy. She had three children, all of whom are alive and well. She is described as a shy, retiring woman, but capable and industrious, a good wife and mother. She was well-balanced, even-tempered, ready to lend a helping hand where she

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could; she took an interest in public affairs and her husband's work, and in every way she seemed a thoroughly well-balanced, sensible woman.

So far as her previous health had been concerned, she had been operated on ten years previously for a squint of her right eye, and for several years she had been treated for stomach trouble.

Present illness.—About two years previous to admission her memory began to fail, and her industry and efficiency to decline. She commented on her failure of memory and concentration and was distressed about it, but latterly came to accept it. She lost interest, and got out of touch with her former social activities, even with her own children.

In October, 1929, when her husband was from home on business, she suddenly developed the idea that he was in prison. She insisted on going to his office, where she created a disturbance, and stated that some of the office girls were away with him. Gradually her condition became more aggravated. She heard voices talking to her, and replied to them. She misidentified people and misinterpreted ordinary, everyday happennngs. When taken to an entertainment she was liable to get up in the middle and leave, saying that such and such a thing was indecent when there was no suggestion of indecency. This type of conduct was quite unlike her former self. Afterwards she appeared to have no recollection of such incidents. She became incoherent in her talk and was facile, foolish, and perpetually happy.

Medical certificates described her as being restless, noisy and excited; confused and delusive in her ideas, taking no active interest in her surroundings, unable to answer simple questions in a sensible manner, and peculiar in her actions.

Physically, she was a healthy-looking, well-nourished woman, who showed no gross disorder. There was a certain amount of slurring in her speech, but there was no disordered response, either of pupils or reflexes. Her blood-pressure was 160/120.

Mentally, she was quiet, and cooperated as well as she could. She did as she was told, and appeared contented, but failed to recognize that she was a patient in a mental hospital. When spoken to she had a difficulty in understanding, and often misinterpreted what was said; sometimes her replies would be to the point; usually they were irrelevant, and often she tended to ramble on in a disconnected, unintelligible way:

What is your full name? "Eh—what is it? as always—full age, name—I couldn't give you—I didn't notice you coming in here at all. You won't be able to see them."

Can you tell me what day it is? "Will it be Wednesday?" (Saturday).

What is the date? "The old date. We were going off for the day, but something came in the way."

What place is this? "I am in this place. It is Dr. Wilson's place."

What town is it? "I don't want any more of that."

She was unable to give any satisfactory account of herself. She admitted hearing voices, but very little reliance could be placed on her answers. The simplest questions she was unable to answer.

How many sixpences in a shilling? "No, I don't think so."

How many pennies in a shilling? "I don't know."

What are 2×2? She gave no answer, but spoke in a disconnected way.

At a staff meeting which was held on November 29, 1929, she gave her name correctly; recognized the place as one of the fever hospitals. She repeated test words, but with considerable difficulty and some confusion. It was noticed that she had a fine tremor of her tongue, facial muscles and fingers. She was able to carry out one or two simple orders correctly, but when the order became in the least complicated she was unable to do it.

Her Wassermann reaction was negative. In April, 1930, an aphasia examination was done.

She was able to understand and carry out simple commands, but with more complicated instructions she was not so successful; for instance, she was quite unable to do the "three paper" test. Her spontaneous speech was slow, but distinct. She recognized common objects and named them. She repeated the days of the week correctly. When asked to repeat the months of the year she said, "I am not very good at keeping it up." On being encouraged, she replied, "I am awfully dense at that part." She then got up from her seat and walked

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away, but came back in a short time. She was again encouraged to say the months of the year, and was even given a start, but it was impossible to get her to continue. She was unable to count numbers from 1 to 20. When encouraged to do this, she said, " No, I have not the time ; it is too near the New Year time. You should give me something I have time to do." She could repeat simple phrases. She was able to read large print fairly well, but she failed to carry out instructions, even such simple orders as "Close your eyes," " Put out your tongue," etc. She was able to write her name, but made many mistakes when asked to write from dictation. She became perturbed and distressed by her failure. When asked to copy the printed word " cat," she looked at it and said, " It is a 'p' you put down first, isn't it ? " Then said, " Isn't it a 'v' next ? I forget how to make a 'v.'" Eventually she put "V" down, followed it up with the letter " F" and seemed quite pleased with her effort.

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THE THERAPEUTIC EFFECT OF ASSISTED RESPIRATION IN ESTABLISHED CASES OF DEMENTIA PRÆCOX.*

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THE researches of Golla and his co-workers, Armstrong, Mann, Marsh, Scott and others on the bio-chemistry of dementia præcox suggested that it might be profitable to explore a line of treatment based upon their results. With this object in view, female patients suffering from dementia præcox have been treated at Horton by a process which might be termed "assisted respiration," the technique of which is as follows:

Sylvester's method of artificial respiration with minor modifications was carried out for a quarter of an hour daily. The object aimed at was to reinforce the patient's respiratory movements so as to eliminate carbon dioxide without the patient's "acidity" being at the same time increased by violent exertion on her part. A pause was made after every five respirations, and a complete natural respiration observed before the assisted respiration was again commenced. The patient's natural rate of breathing was noted at the start, so that the assistance could be made to synchronize with it. The pause enabled any readjustment to be made, so that the patient's natural respiration was assisted by the method instead of being replaced by it; it also gave the operating nurse a rest and provided the opportunity for a relay.

As the patient's volition increased, breathing exercises, swinging the arms in time to music, exercise with the medicine-ball and gymnastics were introduced into the course. Dancing and skipping were also permitted. The former is a useful introduction to social activities, but the disadvantages of the latter will be referred to later. These measures were an automatic check on unjustified optimism, because the patients were unable to perform activities of increasing complexity unless they had reached the necessary

* A paper read at the Annual Meeting, Oxford, July 4, 1930.

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standard of improvement. In the later stages games in the style of net-ball were devised, and the guiding principle throughout, so far as exercises were concerned, was to get the patient to carry out the equivalent of artificial respiration on herself. Step by step with the games and exercises tasks were allotted to the patient. These began merely with attention to elementary personal hygiene. Then followed helping in the ward, leading on to definite work in the laundry or needle-room, or to more specialized forms of occupational therapy. Attainment to full social activity was the ultimate goal. A rigid gradation of activities could not be adhered to strictly because one patient might show a special aptitude in a particular sphere, while at the same time she might be inadequate to an apparently simpler occupation. Assisted respiration was abandoned as soon as benefit was shown by an increase of spontaneity, which was generally accompanied by the desire of the patient to be released from this operation and be given some active employment.

The following is a summary of the cases that were treated in this manner:

CASE 1 (duration 1 year).

Before treatment.—She was dull, apathetic and detached from reality. Impulsively violent and required hand-feeding. Had previously been made to do a little light ward work, but finally became unemployable.

After treatment.—Immediately after having treatment for the second time she began to speak about her previous interests, which was a striking change. By the thirteenth day she turned out a room and cleaned it thoroughly unaided. By the eighteenth day she was taking her food well and working industriously.

CASE 2 (duration over four years).

Before treatment.—She was dull, fatuous, detached from reality, manneristic, destructive to clothing, impulsively violent. Did a little automatic work fitfully, but finally gave it up.

After treatment.—She seemed to enjoy the assisted respiration and said "That's fine." By the sixth day she was helping spontaneously in the ward, scrubbing and sweeping. By the sixteenth day she was capable of being trusted to do ironing in the laundry.

CASE 3 (duration probably nine years).

Before treatment.—She helped fitfully in the ward, but was languid and incapable of sustained attention. Was becoming more fatuous and detached from reality. Scribbled "word salads" on odd scraps of paper.

After treatment.—Immediately after the second trial of assisted respiration she made sensible remarks about it spontaneously, and the next day, instead of a "word salad" she copied out a long paragraph from the newspaper with but few errors. On the third day she wrote a well-arranged letter to a friend, saying how she enjoyed the breathing exercise. By the eighteenth day she was working satisfactorily and cheerfully in the laundry. The improvement was maintained for several months, but she has shown some deterioration recently.

CASE 4 (said to be of "many" years' duration).

Before treatment.—She was dull and almost inaccessible; remained mute when spoken to; habits faulty; had to be washed and dressed; flexibilitas cerea present and well marked. On special suicide caution card.

After treatment.—She was observed to be taking a little more interest in her surroundings, and the opportunity was seized to start assisted respirations. By the third day an improvement was noticed. On the fourth day she showed an

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unusual amount of spontaneity, folding and stacking the bed-linen after being shown how to do it. She also conversed. By the fifth day she was helping usefully in the ward. By the ninth day a great improvement had been noted. She continued to do well and became more cheerful, and the special suicide caution card was cancelled on the thirteenth day after the treatment started. Her habits then ceased to be faulty and she worked industriously, answering readily when spoken to, and asking spontaneously for anything she required in connection with her work.

CASE 5 (duration more than nine years).

Before treatment.—She was admitted in November, 1920, æt. 18. She had become extremely dull, self-centred and fatuous; disorientated for time and place; showed flexibilitas cerea; habits were "wet and dirty" and she had to be washed and dressed. Would automatically rub with a floor polisher in one spot, but was otherwise unemployable.

After treatment.—Treatment started on January 26, 1930. By February 1, 1930, she was doing exercises to music and medicine-ball exercise; her movements were more spontaneous immediately after assisted respiration, and she put on her shoes without prompting. By February 3 she did skipping and dancing, and expressed her enjoyment of the latter, saying it was "lovely." On February 8 it was noticed that she seemed brighter, and moved spontaneously from place to place when polishing the floor instead of remaining in one spot. On the other hand her habits were faulty again after being clean for several days. From then onwards it was noticed that she was more excitable, but by February 26 she was useful in fetching and carrying things, as well as polishing. By March 6 she was able to wash and dress herself and attend to her own toilet by day, but she still required to have her hair done for her, and her habits were faulty at night.

CASE 6 (more than nine years' duration).

Before treatment.—She was admitted in September, 1922, æt. 29; insane heredity. She had become lost to her surroundings and was mute, inaccessible and manneristic; her habits were faulty, and echolalia and flexibilitas cerea were well marked. Sometimes she was impulsively violent.

After treatment.—Assisted respiration treatment was started on February 4, 1930. By February 26 it was recorded that she was less manneristic and impulsive and did skipping, but otherwise there was no further improvement.

CASE 7 (more than nine years' duration).

Before treatment.—She was admitted in February, 1921, æt. 25. She had become lost to her surroundings, and was mute, lethargic, negativistic and inaccessible. Sometimes she screamed or gabbled incoherently, as if in response to hallucinations of hearing, and she was impulsively violent and destructive. Flexibilitas cerea was present. Her habits were faulty and she had to be washed and dressed.

After treatment.—After the treatment had been carried out for twelve days she took to skipping and did it very well. She also ceased to be violent and resistive, but otherwise there was no real change in her condition.

CASE 8 (more than eight years' duration).

Before treatment.—She was admitted in October, 1921, æt. 21. She had become self-centred and apathetic; her attention could not be held, and she could give no account of herself, but chattered incoherently as if in response to hallucinations of hearing. She was subject to attacks of violence and her habits were faulty.

After treatment.—After three weeks of the treatment she was able to join in medicine-ball and breathing exercises and skipping; her habits were clean and she washed and dressed herself; she was excitable, but not violent, and helped with floor-polishing.

CASE 9 (duration rather more than a year).

Before treatment.—Admitted in March, 1930, æt. 23. She showed a marked lack of volition and emotional reaction. Made the most fantastic and irrelevant remarks in a casual manner, and believed that anything she said or thought was broadcast by "wireless." She believed that her possessions were changed in a mysterious way, and that she was the victim of persecution by the Royal Family, and also by what she termed "the heads of the Labour." She heard the voices of her persecutors and saw their forms vaguely through the window. She was

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solitary, sullen and unemployable, and did not occupy herself with reading, of which she was fond, because she saw all the words of the book written on the wall and heard voices repeating them. The delusions and hallucinations were apparent intermittently, perhaps causing her to break off abruptly in the midst of a reasonable conversation to make some irrelevant remark or to show a sudden change of mood.

After treatment.—She became employable and helped usefully in the ward and in the laundry. Her behaviour ceased to be affected so much by her delusions and hallucinations, and she showed a more natural emotional reaction. She said the assisted respiration made her feel stronger, and prepared herself for it punctually at the appointed times.

CASE 10 (six months' duration, with a history of mental instability for three years previously).

Before treatment.—Admitted in May, 1930, æt. 24. Inaccessible, restless, hallucinated, and given to foolish and inconsequent pranks; resistive to attention and requiring tube-feeding; said she was less than an insect and had leprosy and venereal disease; showed negativism and cataleptic phenomena, which finally passed into a state of profound resistive stupor.

After treatment.—On the second day of treatment she half opened her eyes and had a furtive look to see who was performing the movements on her, and was less resistive. Two days later she made a slight response to a greeting. On the ninth day she began to feed herself. On the tenth day she obeyed simple commands, and walked spontaneously into the dormitory from the verandah when it was the correct time to do so. On the eleventh day she sat up in bed reading the papers, but shielded her face with her hand and adopted a stuporose attitude when she thought she was being observed. On this day, too, it was thought advisable to watch her for suicidal tendencies, as this unpleasant aspect of spontaneity had appeared side by side with more favourable signs of activity. It is yet too early to say more than that the assisted respiration coincided with a marked increase of volition and interest in her surroundings. An amusing development on the thirteenth day was that she solemnly performed the method on herself without assistance, taking great pains to expand her chest and compress it alternately as the nurses had previously done.

Two other cases were similarly treated, but derived no benefit.

Of the 12 cases dealt with 4 showed great improvement, which has been maintained, with one exception, for nearly six months. One has deteriorated in usefulness recently, but is still better than she was at first. Six have shown slight but definite improvement, and have maintained the level reached without further advance. Two did not benefit, and in their case the treatment was abandoned after a month's trial.

Improvement has been shown chiefly on the conative side, unemployable and helpless patients becoming capable of employment and of attending to themselves. It was also noticed that there was a tendency for impulsive attacks of violence or destructiveness to give place to harmless but somewhat mischievous pranks, especially as the result of example. One stuporose patient began to attend to herself and take an interest in reading; but the increased spontaneity was also manifested by surreptitious attempts at self-injury. Generally speaking, there was less change in the cognitive and affective spheres, except that the patients would answer more readily and accurately when spoken

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to, and would show a more appropriate emotional response than before the treatment was started. All the patients treated were in a severe or advanced stage of the disease; and the two who failed to derive any benefit were so bad mentally that they might have been considered hopeless from the start.

The most striking improvement always occurred immediately after a spell of assisted respiration. Such improvement was probably less in degree than later developments, but it was rendered conspicuous by contrast with the patient's previous condition. An early response to assisted respiration was generally of good augury. There was reason to believe that of the subsequent exercises, skipping was harmful; and those patients who took to it vigorously at an early stage did not make any further progress. It served the purpose, however, of keeping them out of mischief. In the earlier stages of the course, concerted action and the participation of an adequate number of nurses in the exercises were necessary to give the patients confidence and set them an example; and to some patients the rhythmic and automatic nature of the earlier movements seemed to have a peculiar appeal.

The results of the treatment appear to show that assisted respiration had the effect of changing the patient's condition for the better in ten cases out of twelve. It seemed to provide the first step towards the re-establishment of contact with social activity. It broke the spell of dissociation, and brought their environment into touch with them in a form that was insistent, but not irritating. It helped them—without much initiative on their part—to emerge from the cocoon of phantasy in which they had been wrapped, and the transition was made as smoothly as possible. An immature personality was brought into contact with reality, and from then onwards coaxed and guided into useful channels of self-expression.

The first steps were the most critical, and extreme care had to be taken to avoid driving the patient back again into the refuge of seclusiveness. Sometimes considerable fragments of the old healthy personality persisted, and then past interests might be revived; sometimes new interests had to be initiated.

Certain main lines of re-education have been mentioned specifically, but the whole method had to be pervaded with a quality which is less easily defined. It consisted in an intimate knowledge of the patient's life-history and individual symptoms, and the sympathetic using of that knowledge to the best advantage; and it might be summed up in the phrase, "judicious management." The subsequent readjustment to environment depended largely upon

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this; but the essential key that opened the door to the possibility of such management was the preliminary course of assisted respiration.

I am indebted to Dr. J. R. Lord, the Medical Superintendent of Horton, for permission to publish these results.

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CHARACTER FROM THE BIOLOGICAL POINT OF VIEW.*

By Prof. Dr. JAN PILTZ,

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THE problem of character has long occupied the minds of philosophers, pedagogues, sociologists and psychologists, such as Socrates, Plato, Pascal, J. J. Rousseau, Kant, and later Bahnsen, Wiszniewski, A. Bain, A. Martin, Ribot, Smiles, Mill, Perez, Paulhan, Le Bon, Galton, Fourneaux, Foerster, Klages.

Perez, for instance, worked on the problem of the development of character from childhood to full maturity; Ribot and Paulhan endeavoured to differentiate the various forms of character; Le Bon emphasizes the *rôle* played by character in the life of nations.

In the year 1837 Prof Michal Wiszniewski, of the Jagellon University in Cracow, published his work *The Characters of Human Intellect*, treating the subject in a descriptive, satirical manner.

The name "*characterology*" was introduced in the middle of the nineteenth century by Bahnsen while the name "*ethology*" for the science which treats of the study of the laws that govern the formation of individual and national character was proposed by Mill.

It is only within the last few decades that the problem of character has been accorded more serious attention by psychiatrists, as, for instance, by Kraepelin, Kretschmer, Kahn, Jaspers, Adler. In Russia, before the Great War, Prof. Lazurski occupied himself with methods of the study and development of character.

How vitally important is this question of character may be shown by the fact that at the annual assembly of the Swiss Psychiatric Society, characterology as a new branch of science was given a foremost place in the discussions.

At this assembly the strictly psychological side of characterology was discussed by Jung, and Boven read a paper that aroused much enthusiasm, giving the biological point of view.

In the present short paper I wish merely to indicate upon what

* A paper submitted at the Annual Meeting, Oxford, July 3, 1930.

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traits of an individual, in my opinion, his character depends; furthermore, to show the *rôle* played by character in the life of individuals and nations; and finally, to emphasize the pressing need for systematic study of character.

In approaching the problem of character from a general, biological point of view, it must be borne in mind that living creatures possess morphological, physiological and psycho-physiological traits, both higher and lower. Whether certain plants, besides morphological and physiological traits, possess also certain psycho-physiological traits—as some scientists claim—it is not my intention to discuss here. It is, however, undeniable that animals of a high degree of development, such as monkeys or dogs, do possess, besides these three groups of traits, certain incipient psychic traits also.

The group of *morphological* traits comprises, for instance, stature, dimensions, structure (macroscopic and microscopic) of the skeleton and of the internal and external organs.

In the group of *physiological* traits we include the quality of the action of the heart, of the alimentary canal, liver, spleen, kidneys marrow and skin.

In the group of *psycho-physiological* traits we include, among others, impressionability, the power of reaction to external and internal stimuli, the quality and degree of general sensations, such as hunger or pain; the quality and degree of transient and permanent states of feeling that we may observe in timid, cowardly, courageous, serious or cheerful natures; the quality and force of temperament and the instinct of self-preservation or the tendency to create and assure to one's self a means of existence and favourable conditions for development; the quality and force of sex-impulse and the instinct of race-preservation, or the tendency to create and assure to one's family favourable conditions of existence and development; the quality and force of family and social feeling (for instance, love in all its manifestations, the solidarity of communities); furthermore the quality and degree of agility and efficiency of movement, of grace and wit; the quality and degree of technical and inventive ability; the quality and degree of ability in languages and music, of the talent for singing and dancing, or for sculpture; the degree of love of work; the degree of courage and energy.

To the group of the *lower psychic traits* belong the quality and degree of observation and attention; the faculty of receiving sense impressions; the quality of memory; the faculty of orientation

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with regard to time, place and surroundings; the degree of initiative and enterprise; the quality and force of the tendency to the consequential completion of enterprises undertaken, of finishing work begun; the quality and degree of the talent of organization.

The group of the *higher psychic traits* include, among others, the quality and degree of the talent for oratory, for painting, for poetry, for novel-writing and for pedagogy; of the faculty of logical thinking, of judging and of drawing deductions—that is, of the faculty of reasoning; of the critical sense, and so-called common sense; of the ability to discover hidden laws of nature, to seek for truth, to create; the quality of ideas; the quality of ideals, and the degree of the tendency to strive towards perfection; the degree of the sense of responsibility, the sense of dignity and honour; the degree of the power of self-control; the degree of honesty and equity; the quality of ethical conceptions; the attitude towards spiritual matters, especially religion.

The lines dividing these different groups of traits are so fluid and so faint that it is sometimes difficult to decide in which of two neighbouring groups a particular trait should be included.

All these traits, however—and upon this I would lay particular emphasis—are not only closely interdependent, but form an organic whole, the one deriving from the other.

It is understood, of course, that these traits are apparent in different individuals in varying degrees. According to the degree of individual and phylogenetic development, under favourable internal and external conditions they become stronger, while under unfavourable conditions they tend to disappear. In pathological conditions we sometimes meet with an entire lack of certain traits or with disharmony in their development.

The general behaviour, acts and success of every living being in the struggle for existence depend on all the aforementioned traits, whether inherent or acquired, but not upon all in the same degree.

Some of these traits exercise a decisive influence, while others are of secondary importance. The most important and essential traits, those which exert the most influence on the conduct, acts and success of every living being, characterize most clearly a given individual and decide his character.

We will now consider, therefore, which of the aforementioned traits are most important.

First of all, we must see how this matter stands in the animal world.

Of course, animals such as the lion, the tiger, the hare, the ant

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or the snail differ considerably from each other in their morphological, physiological and psycho-physiological traits.

All these animals, however, possess traits that play a decisive *rôle* in their biological life. The life of animals being more primitive and less complicated than the life of human beings, the answer to the question is correspondingly easier. In the animal world, the decisive *rôle* in biological life is played above all by physical force, the degree and quality of physiological and psycho-physiological efficiency and energy, the quality and force of the instinct of self-preservation, sexual impulse, the instinct of race-preservation, of family, the gregarious instinct, as well as abilities and talents (for instance, the masterly work of beavers, ants, bees, or spiders).

The behaviour, acts and success of man in his struggle for existence depend also upon his stature and strength, the quality and force of his temperament, his physiological and psycho-physiological efficiency and energy, the quality and force of his instinct of self-preservation, the sexual impulse, the impulse of race-preservation, family and social feeling, capabilities, talents and energy; but besides all these traits his success will depend upon his intellect, his moral worth and his attitude towards religion, and, as a matter of course, upon his upbringing and education.

If we now compare the most important traits of man with the fundamental and most characteristic biological traits of animals, we shall see that in their general outline these traits are identical.

But only in their general outline, for in human beings, besides those mentioned above we find a combination of traits such as intellect, moral worth and religious feeling—traits which distinguish man from the beast.

The difference between humans and beasts is also evident in the fact that in man, stature, physical force and health are not absolutely necessary conditions for success and contentment in life.*

Napoleon,† for instance, in spite of his short stature, Newton,

* In order to prevent misunderstanding, I consider it advisable to make the following reservation. The interests of society naturally do not go hand in hand with the interests of the individual; not infrequently the interests of society demand even very serious life sacrifices on the part of individuals, and on the other hand very often we meet with individuals who give no evidence in biological life of much energy, or are even in this respect insufficiently developed, and who, however, thanks to their unusual intellectual qualities, frequently reach the highest summits and create great cultural values, from which all mankind profits. We may say, however, that in principle the public good goes hand in hand with the individual good and *vice versâ*.

† Referring to Napoleon, I do not here touch upon the question of the true value of his acts to humanity.

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in spite of his weak constitution, and other famous people similarly handicapped, played parts of the first importance in the history of humanity. We see, therefore, that although stature, force, temperament and health play an important part in the life of human beings, these traits are nevertheless not an absolutely necessary condition to the attainment of influence and importance in the world.

It is the same with education. We know that sometimes a man of little education, even quite illiterate, may exercise an undeniable influence on those around him. Thus education is not an absolutely necessary condition for success in life.

And the same may be said of temperament. We know that even people of genius are sometimes timid, slow, or actually phlegmatic.

It is not yet possible to give a satisfactory definition of character. I think, however, that already, taking as a basis the results of recent scientific research and also the arguments I have here advanced—we may venture to say that the character of a man is decided by those biological traits that play the most important *rôle* in his conduct, his acts and his success in the struggle for existence, that is:

> That the character of an individual depends above all upon the degree and quality of his physiological, psycho-physiological and psychic efficiency and energy, especially on the quality and force of his instinct of self-preservation (that is, the faculty of creating for himself favourable conditions of existence and development), his sex-impulse, instinct of race-preservation (that is, the tendency to create and secure to his family favourable conditions of existence and development), on the quality and kind of his family and social feeling, on the degree of his initiative, enterprise, energy and perseverance, his power of self-control, on his intellect, on the quality of his moral value and his ethical ideas, on his sense of responsibility, dignity and honour, and finally, on his attitude towards religion.

The above conception of the problem of character is of course only a modest essay on a question which will require exhaustive research. Especially necessary are researches on:

> the character of animals;
> the development of character in children;
> the character of adults;
> heredity in character;
> the character of nervous children, of difficult and exceptional children;

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psychopathic children; and
the character of adult psychopaths.

The Practical Side of the Problem of Character.

If the problem of character be restricted solely to human beings, and if we consider it from a social and utilitarian rather than from a theoretic-scientific standpoint—especially from the standpoint of State politics—we shall be forced to ask ourselves what combination of traits are most important, most useful, and therefore most desirable in the private life of an individual, and what are most desirable in public life.

Without a doubt we shall find that it is the following combination: Physical health, intellect and character, for on these traits depend, among other things, the economic force of the nation and the power of the State.

In so far as physical health is concerned, the State now gives numerous proofs of active interest, whether by the creation of institutes and by the organization of practical courses of physical training, or by the encouragement of sport, etc. Concern for health is also evident to-day in the development of hospitals and colonies, and above all in prophylactic measures, especially in the organization of various kinds of consulting rooms. Of great importance, too, is the rapidly increasing interest in the question of eugenics, initiated by Galton.

Everyone knows what a cultured state will do to-day for the intellectual development, the education of its citizens.

We will now ask ourselves the question, What is being done to-day towards the development of character?

The development, education and forming of character has of course long been a subject of earnest study by our most eminent pedagogues and teachers.

It is impossible in a short sketch to give a complete history of the efforts of pedagogues in various countries. I must therefore confine myself to the citation of a few examples.

In Poland in the sixteenth century Piotr Skarga was famous as a preacher. At the beginning of the nineteenth century, Tadeusz Czacki, founder of the Krzemieniecki Lyceum in Wolyn, considered character as the principal thing in the education of youth, and that the principal aim was the formation of upright and steadfast characters.

In England, several decades have passed since the famous Oundle

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School was founded by Sanderson, well known for his knowledge of children and his skill in the formation of character.

In all cultured countries to-day, schools—especially schools of the " new type," such as that of Dr. Reddie, Abbotsholm, England, of Dr. Lietz, in Thuringia, of Dr. Zuberbuhler, Glarisegg, Switzerland, and, in Poland, Prof. Lopuszanki's school in Rydzyn and Madame Malkowska's school in Czorsztyn, as well as organizations like the Boy Scouts and the Y.M.C.A., are doing much towards the formation of character.

In New York, for several years the systematic study of the character of the pupils has been carried on in school.*

In Boston the schools include exercises for the development of character by means of calling into play the emotions.†

Furthermore, during my recent visit to the United States at the International Congress of Mental Hygiene, I learned that for the past five years a special institute has existed for research on the education of character in children. This institute is working in collaboration with the Ministry of Public Education in France, and with the Department of Public Education in Mexico.

The character of a child is inherited, as is the whole organic structure of his being. But although a child is born with a character inherited from his forebears, the development of that character is nevertheless subject to the influence of his parents, of schools, and also of the conditions in which he lives.

There is no doubt that physical training exerts a favourable influence on the development of certain traits of character, developing, for instance, quickness of comprehension, courage, energy, self-control, etc. Physical health is also conducive to the development of character. The same may be said of education. For instance, acquaintance with fine examples of history and literature, and especially with the biographies of eminent people, is bound to influence favourably the development of character.

All this, however, is in my opinion insufficient for the proper, systematic development of character.

Just as physical education demands the elaboration and employment of the most rational methods, just as pedagogy, or rather didactics, seeks for the most rational method of teaching, so also must be worked out and perfected a proper method for the study

* I owe this information to Mr. Van Sickle, of the Rockefeller Institute Bureau in Paris.

† This information was given me by Dr. Campbell, Professor of Psychiatry at Harvard University, Boston.

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of character, as well as the most suitable methods of developing educating and forming it.

According to the information that I have been able to gather—doubtless far from complete—the only institution of this nature is " The Character Education Institution " in Washington, U.S.A.

In order to fill this lacuna in the domain of mental and social hygiene, steps should be taken to found in Europe national institutes of characterology.

An Institute for the Study of Character.

In speaking of such an institute, I have not in mind the erection of any special building, but simply a judicious concentration of the efforts and work of the most eminent pedagogues, sociologists, psychologists and psychiatrists for the purpose of initiating the scientific study of character.

The tasks that, in my opinion, should be undertaken by such an institute are :

(1) The devising of a scientific method for the study of character.

(2) The determination of which traits of the character of an individual are most necessary for his development and for the development of society, or to the State in its competition with neighbouring nations.

(3) The elaboration of methods for the development, education and formation of character. And finally,

(4) The elucidation of what traits of the national character are most essential and most characteristic, and the demonstration of peculiarities of character of the various nations, with a view to mutual improvement.

The mere preparations for the organization of this kind of collaboration will demand much time and work on the part of the most eminent pedagogues, sociologists, psychologists and psychiatrists.

Clinics for nervous and mental diseases could furnish such an institute with material touching upon pathological deviations of character, for instance, in the domain of sexual psychopathy, pseudologia phantastica and moral insanity, etc.

The Cracow University Clinic for Nervous and Mental Diseases has already organized a special characterological department. This department is composed of an out-patient consulting-room for neuropathic, difficult and exceptional but intelligent children, and

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of a clinical department for in-patients, which is a kind of experimental characterological laboratory.

In this clinical department, as I have already mentioned, research is carried on only upon pathological states of character.

My conviction, based on the foregoing arguments, is this: that as character is the most important motive force of life, contributing in large measure to the increase of the economic force of a nation, it follows that the founding of characterological institutes is a matter of the first importance.

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THE SOURCE OF EXCITATION IN LATE RIGIDITY, THE MANIC-DEPRESSIVE SYNDROME AND THE EPILEPSIES, AND THE MECHANISM OF RECURRENCY.

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The Source of Excitation in "Late" Rigidity.

The writers of text-books do not give us much aid in gaining a true idea of the cause of "late" rigidity—rather the reverse, for they seem to think it necessary, always, to drag in "decerebrate" rigidity as an essential preliminary towards understanding the factors in the case.

Now "decerebrate" rigidity is a clear-cut example of a "release" phenomenon. It is the instant result of loss of inhibitory control. Its manifestation, like that of all "release" phenomena, is immediate.

"Late" rigidity is, as its name says, late. Its manifestation may be weeks, and in some instances even months after the incidence of the lesion causing it. You must surely agree with me that such a quality precludes the possibility of its inclusion in any ordinary category of "release" phenomena. That understood, we will get down to our subject.

Most of us are interested in the source of the excitation manifested the epilepsies and in the manic-depressive syndrome. The fact that these syndromes are often manifested secondarily to lesion in the brain has suggested a study of lesion in the cord, where nerve-fibre and cell-body are perhaps better known.

Pure lesion of the pyramidal tract in cord or brain is followed by at least three kinds of rigidity—"initial" (7), "early" (7), and "late" (7) rigidity. The first, the "initial," is due to the irritation of the presence of the lesion itself. The second, the "early," is due to the irritation of inflammation around the lesion. Each of these irritations or excitations descends in the lesioned fibres on the

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efferent side of the lesion, and the rigidity caused by each has come and gone long before "late" rigidity begins to be manifested.

"Late" rigidity, the third mentioned, is not caused by excitations descending in the lesioned fibres efferent to the lesion, for the simple reason that by this time they are non-irritable, dead, and gone. The excitations that cause "late" rigidity must, therefore, travel to the muscles by another route; for we know that the excitations are not myogenic, but neurogenic. Now, as they are neurogenic, all that we need do to find the source of the excitation is to follow the course of the neurons from the affected muscles, back along the arcs, until we find it.

The "late" rigidity has followed upon, let us say, a pure pyramidal lesion in the cord. All the muscles below the level of the lesion have become hypertonic, and as this hypertonicity is neurogenic, it must have descended to each muscle as a state of excitation in its effector neuron. This neuron, the effector neuron, has its cell-body in the anterior horn. It is the common final path, amongst others, of the arc of the proprioceptive spinal reflex and of all the descending extra-pyramidal tracts. Now we know that it does not derive its state of hyper-excitation from the proprioceptive, or myotatic, spinal reflex because the rigidity is neurogenic, not myogenic. Nowhere can I find any reason to suggest that the state of hyper-excitation is derived from any of the descending extra-pyramidal tracts. Nor can it be that a state of hyper-excitation has descended by irradiation in the anterior column of grey matter to which the effector neuron belongs, for then there would be rigidity of the muscles above the level of the lesion—a thing that never does take place. Among the contributors to the common final path there remains only the neuron of the posterior horn. This neuron is stationed as an intermediate neuron between the receptor-neuron of the cutaneous-sensory spinal reflex and the effector-neuron and between the pyramidal tract and the effector neuron. We must take it, then, that this intermediate neuron is the pathway by which the state of excitation is conveyed to the effector-neuron. Not, however, from the receptor neuron of the cutaneous-sensory spinal reflex does this state of excitation come, for it is "under our eyes," as it were, and no cause for excitation is to be seen. Nor can the intermediate neuron receive its state of excitation by irradiation from above down the column of grey matter of the posterior horn to which it belongs, for that would, again, necessitate a state of rigidity in the muscles above the level of the lesion—a thing unheard of. It remains, therefore, that the state of

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excitation must come to the intermediate neuron (posterior horn-cell) from the pyramidal tract. It cannot come from the pyramidal tract below the level of the lesion, for that part is inactive, and functionless, if not dead. Nor can it come from the pyramidal tract above the level of the lesion, for such a state of excitation there would cause a state of rigidity of the muscles above the level of the lesion—a thing unknown. We seem, now, to have come to a " dead-end " ;

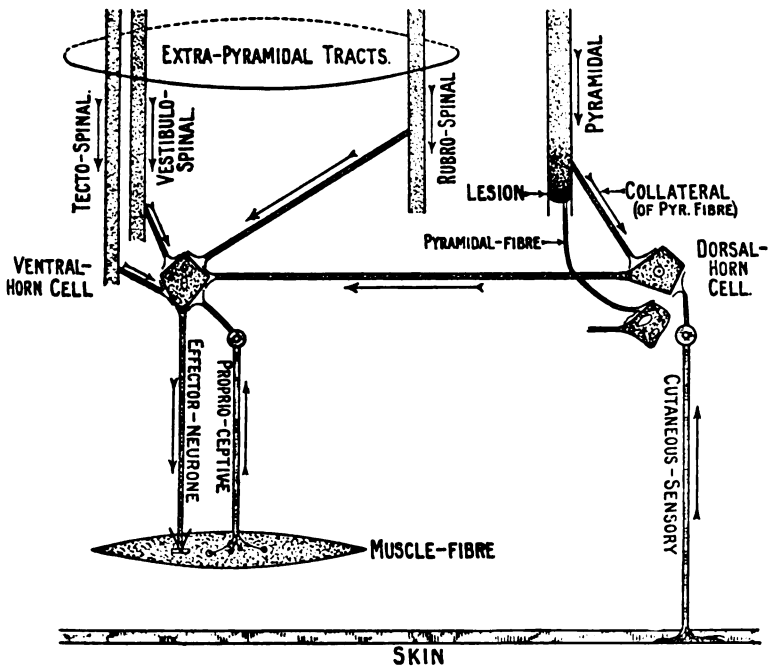

FIG. 1.

but " dead-end " there cannot be, for we know that " late " rigidity is neurogenic. *If* there were a pathway that came from the pyramidal tract close above the lesion, and, by circumventing the lesion, gained a posterior-horn cell below the level of the lesion, a state of excitation could, in this way, be conveyed from the pyramidal tract above the level of the lesion to the muscles below the level of the lesion. Now such a pathway is afforded by the pyramidal collaterals, but only by those collaterals that, branching off, pass down outwith the area of the lesion to gain posterior-horn cells below the level of the lesion. Now the supreme point is this:

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Have we any reasonable data on which to base a belief in the probability of a state of excitation existing within the limited area that is bounded by the central face of the lesion and the nearest collateral above?

I think we have; but to get at it, it is best now to look at the lesion from the physiological angle and consider it in the light of a state of complete nervous-conduction block. And here the laboratory comes to our aid, for an experiment with complete nervous-conduction block has been made in the muscle-nerve preparation, wherein the central end of the nerve is kept under continuous stimulation during and beyond the gradually-induced resolution of a non-irritating, imposed state of complete nervous-conduction block. At the moment of renewal of nervous conduction, when resolution of the block is complete, it is found that the initial strokes of the muscle tracing record a state of hyper-excitation—which quickly regains normality. I read these initial strokes of hyper-excitation as the outward expression of a state of hyper-excitation that has been created in a small area of the axonal tissue right at the central face of the imposed block.

If you agree that the facts in this experiment permit of such an inference, we can return to the case of complete nervous-conduction block due to lesion of the pyramidal tract in the cord in a living subject. Here—where the central face of the block is subjected to a battery of nervous impulse excitations, minimal and submininal —I make the suggestion that a state of hyper-excitation is created in an area of axonal tissue at the central face of the block, and that throughout the weeks this area will tend to extend. The only possible direction for such extension is up-stream, and the up-stream limitation of the extension will be the presence of a by-path through which the state of hyper-excitation can escape or drain away. The pyramidal tract in the cord throws out collateral branches from its fibres; and the collateral that is utilized as a by-path can only be that one which is nearest to the complete nervous-conduction block in its pyramidal fibre, and which, evading the site of the lesion, can reach the posterior-horn cells below the level of the lesion. It would seem to take about three weeks for the hyper-excitation from the face of the block to reach this collateral (1).

And now, as far as I have been able to uncover them, source, process and pathway lie open to the examination and critical consideration that I would ask you to be so kind as to bring to bear upon them. The sympathetic system has not been brought under

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consideration, as it has not yet been generally conceded that it has any effect on muscle tonus, though it is known to delay the onset of fatigue (6).

The process we have defined above is readily referred to as a process of "block-reaction through by-path." As a process, let me repeat, it should be severely criticized before acceptance, for if proved unassailable it will have to be reckoned with throughout the whole nervous system right up to the highest levels, wherever a state of complete nervous-conduction block happens to have a by-path from the afferent side of the arc in which it is situated.

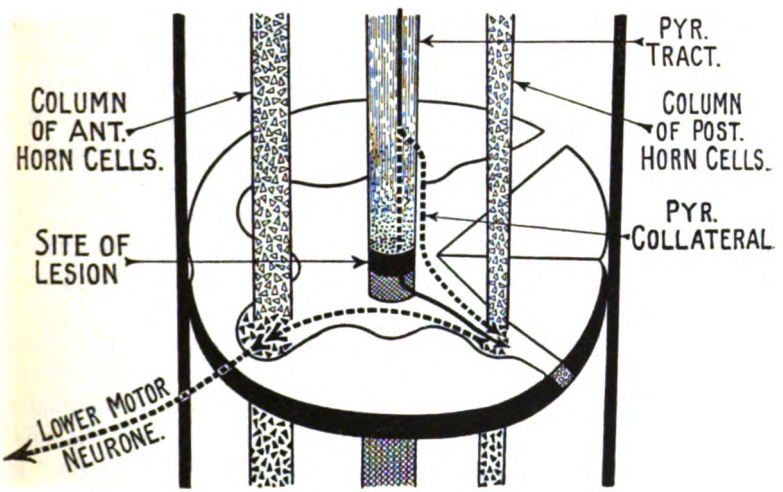

FIG. 2.

The process, of course, must not be expected to transgress the law of uni-directional conduction in the synapses.

The process we have put forward is not without a fair amount of indirect support. For instance, "late" rigidity does not follow a pure lesion of any, or all, of the extra-pyramidal tracts in the cord; *they* have no collaterals. Complete transverse section of the cord is never followed by "late" rigidity; but when all the descending tracts (in one side of the cord) alone suffer lesion (collaterals and grey columns remaining intact), "late" rigidity always supervenes. A case is mentioned in Sir J. Purves Stewart's book (1) in which just a small shred of nervous tissue was all that prevented the condition of "isolated cord"—and yet that shred was sufficient to allow of the subsequent development of "late"

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rigidity. I take it that there must have been non-traumatized collaterals in that shred, and that they constituted the essential and sufficient vehicle for the manifestation of the "late" rigidity.

Bazett and Penfield's (2) findings (quoted by Brain and Strauss) in hemi-decerebration also lend support to the process we are advocating. They "were able, by means of a special technique, to keep the decerebrate preparations alive for several weeks (2); but they found that the primary homolateral hemi-rigidity passed off after a certain period and gave way to a contra-lateral hemi-rigidity (2). They say that "the primary homolateral rigidity must be regarded as an irritative phenomenon and is merely transitory" (2). The primary homolateral rigidity is, therefore, an "initial" and "early" rigidity. Irritative excitations pass down the lesioned fibres on the efferent side of the lesion—such fibres as those that go from above to control the vestibular nuclei on the same side. In regard to the "late" contralateral hemi-rigidity, the only possible explanation, in my opinion, is that of the backward extension of hyper-excitation, by block-reaction process, in vestibulo-petal fibres whose bilateral nuclei inter-communicate across the median line, and thus give a by-path to the opposite vestibular nuclei.

Again, take that notable case of a soldier wounded in the Great War. The cortical sensory reception area of one hemisphere was removed by the fragment of a shell, and this was followed eventually by severe and persistent pain. This pain could only be "thalamic pain." The orthodox interpretation of this "thalamic pain" is that it is due to loss of the cortical control over the thalamus as a result of the ablation of the cell-bodies of the neurons of the cortico-thalamic fibres. It can be argued, however, that since there can be no sensation without stimulation, and since, at the late date in this case with which we are dealing, there are no pain stimulations to arouse thalamic sensations of "mass pain," there can be no thalamic "mass pain"; and yet there is thalamic pain, only too real and persistent. To my mind the only possible solution of this paradoxical state of affairs is that a state of hyper-excitation extends back to the pain-cell bodies of the lesioned thalamo-cortical neurons, through the process of "block-reaction."

Further indirect proof is conveyed by the close correspondence between the length of time from the incidence of the lesion until the manifestation of the late rigidity and the length of nerve-fibre from lesion to by-path. The distance between lesion and by-path in a pyramidal lesion in the cord is probably much shorter than

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that between the lesion of the same tract in the brain (say from hæmorrhage into the internal capsule) and the by-path which starts out from the cortex. In the former "late" rigidity becomes manifest in about two to three weeks, in the latter in about twelve weeks (1). In a lesion of the short nerve-fibres of the extra-pyramidal system in the locality of the basal ganglia, "late" rigidity may make its appearance as early as one week after the primary acute attack of epidemic encephalitis. Of course, in "late" rigidity we all feel that something must be maturing in time-space on account of the very fact of its lateness in manifestation.

And now, a word about the "late" rigidity that follows lesion of the pyramidal tract in the brain—say from hæmorrhage

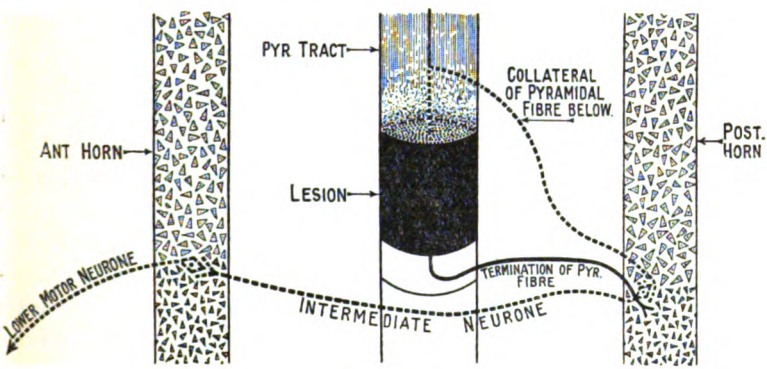

FIG. 3.

into the internal capsule. No collaterals are given off by this portion of the tract. The state of hyper-excitation has free way to extend right up into the cortex. Within the cell-bodies of the higher neurons, as a state of hyper-excitation, it can extend or irradiate to associated neurons on the same level. These may present themselves as by-paths, but they can only be so if they can descend outwith, and past, the lesion in the internal capsule, unharmed. The fronto-pontine tract does this by descending through the far anterior end of the internal capsule. Apoplexy in the internal capsule, when consistent with viability, is found restricted to a relatively small area within the capsule. The fronto-pontine fibres terminate in the tonus-reflex centres within the pons. The route taken is, therefore, quite extra-pyramidal. Jacob would have us regard the extra-pyramidal system as a part of the voluntary (pyramidal) tract through which cortical impulses are directed

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to the anterior horns. Dr. S. A. Kinnier Wilson (3) impresses on us the fact that "a large part of every voluntary movement is both involuntary and outside of consciousness." This by-path, therefore, besides being "the only way," gets high physiological commendation. Note that the resultant "late" rigidity has that "selective accession of tone" (3) characteristic of pyramidal rigidity. And that is why I have suggested that the by-path descends through the particular reflex-tonus centres in the pons instead of through the greater centres for general reflex-tonus higher up.

Extra-pyramidal rigidity.—In her *Observations on the Parkinsonian Syndrome in Lethargic Encephalitis*, Dr. Ivy Mackenzie (4), referring to vestibular lesion and its extensor rigidity, says there is reason to believe that the vestibular nuclei become foci of irritation through the receipt of stimuli from sources of central origin, and that we are dealing with a delayed and remote reaction of structures whose function in the harmony of nervous integration has been impaired.

He seems puzzled about this hyper-excitation which comes from a distance; he cannot place its hidden source. But, thanks to the block-reaction process, the solution of the difficulty is now simple. The situation and its interpretation may be put in this way: Nerve-fibres from Deiter's nucleus (lateral vestibular nucleus) run forward in an encephalad direction to the oculo-motor nuclei and the colliculi; in doing so they traverse the mesencephalon (which is the commonest site of epidemic encephalitis) and sustain a lesion; the mechanism of "block-reaction process" thus becomes operative and a state of hyper-excitation invades the lateral vestibular nucleus; this nucleus is a reflex-extensor-tonus centre; the vestibulo-spinal tract conveys the state of hyper-excitation to the anterior-horn cells of the extensor muscles and extensor rigidity is manifested.

Dr. S. A. Kinnier Wilson (3) frowns at a statement of the Vogts in which the suggestion is put forward that the source of the corpus striatum syndrome is without the corpus striatum. But something must be forcing their minds in that direction. They are sensing the operation of something that does take place—at least elsewhere—and of the nature of which they are not yet aware.

In regard to the more common type of encephalitic rigidity (extra-pyramidal), which is a mixed flexor and extensor rigidity with flexor predominance in hypertonicity, I ask you to envisage a lesion and states of complete nervous conduction block in many of the fibres from the globus pallidus composing the ansa lenticularis;

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states of hyper-excitation from "block-reaction" extend back to the globus pallidus; irradiation to unaffected associated neurons takes place and descends in their efferent by-paths to the red nucleus and vestibular nuclei (which are controlled by the globus pallidus), to be expressed as flexor and extensor rigidity. As this is a pallido-genic rigidity, it affects all the muscles generally, in contra-distinction to the selectivity seen in pyramidal rigidity.

Lesion of a proportion of efferent fibres from red nucleus to substantia nigra would also tend to accentuate flexor rigidity.

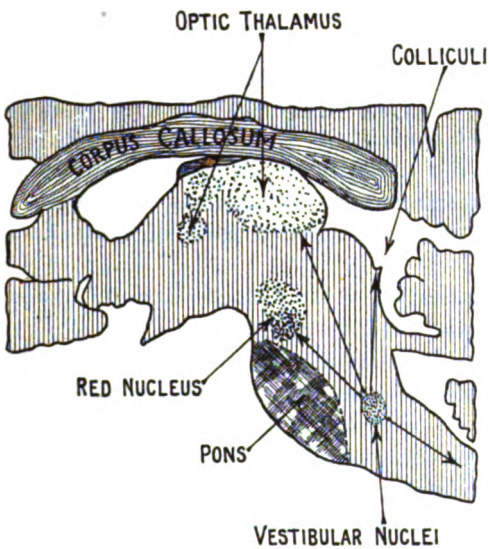

FIG. 4.—(Modified, after Foix and Nicolesco.)

In leaving the subject of "late" rigidity there is one pertinent fact I would ask you not to forget, *viz.*, that lesion of a descending tract in the cord is followed by "late" rigidity only when the tract has collaterals. No collaterals, no "late" rigidity! No by-paths, no "late" rigidity!

The Source of Excitation in the Manic-depressive Syndrome, and the Mechanism of Recurrency.

(a) *The manic phase.*—Away back in 1911 Dr. R. M. Marshall (5) drew our attention to the "periodic attacks of excitement and depression in the chronic insane," and from a study of them argued

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a state of molecular disorder in the nervous system of the primary or adolescent manic-depressive psychosis.

Gross organic disease of the brain means lesion, and lesion means complete nervous-conduction block. Molecular disease or disorder of the nervous system may also mean complete nervous-conduction block.

This state of block will be present during the " interval " between attacks, as well as during the attack, and some deficiency or lack should then be discernible. " The interval " patient is lacking in emotivity, initiative, spontaneous sociability and enterprise. He seems " tame " and " colourless," suggestible and fairly easily guided. The *élan*, urge and *joie de vivre* are but shadows of themselves and the rivers of the mental life run low. The outstanding defect seems to be in the supply of affect, with its power to incite—which is greatly diminished.

It seems as if a majority of the organic excitations, which are psychically interpreted as cœnæsthesis, or affect, must have somewhere, in part, sustained a state of complete nervous-conduction block.

The hyper-excitation of the " block-reaction " can here be taken as a summation of affective energy.

This force, by irradiation to the neurons of the unblocked pathways, would soon escape and rush into consciousness and peripheral expression, were it not held up by another force, the force of inhibition—cerebral inhibition.

But this inhibition can suffer fatigue, and be overcome, as its opponent goes on increasing in strength.

Then follows the precipitation of the manic attack by the out-rush of affective energy, which incites ideation and races to relief in wild motor expression.

Sometimes " the attack " is not so precipitate. Then little tricklings of overflow appear, seen as fleeting flushings of the skin, vagrant myalgias, odd little motor excursions, impulsive purposeless little apprehensions and alarms—all in their small way flagging warning of the coming outburst. Any sudden increase in affectivity may precipitate an overflow.

Half an hour before a dance, during " the interval " between her manic-depressive attacks, a patient was presented suddenly with a rather nice lace collar to wear at the dance. Her delight was great. The affect was great. A manical attack was precipitated and she could not grace the dance with her presence that night.

The major function of the brain is said to be inhibition. Its

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employment not only spares us from irrelevant extraneous disturbances, but retains for us some reserve of neuronic and muscular energy for emergency calls; for it is said that we never do call upon all the neurons and fibres of the muscle groups employed at any one time, no matter how great the muscular effort may have to be.

In hypnosis the unconscious discretionary use of inhibition, as regards retention of reserve, seems to be abrogated when a supreme muscular effort is suggested, so that every motor neuron and muscular fibre of the requisite groups are called into play without reserve.

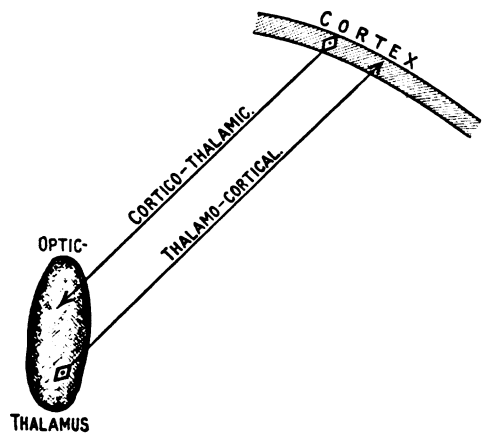

FIG. 5.

Some of us may have seen a girl in her 'teens under hypnosis, with head on one chair-back and heels on another, sustain the weight of two or three people without quiver or give from a rigid maintenance of the horizontal position.

Again, everyone of us must have witnessed the sight of a slightly built maniacal woman requiring the services of three or four nurses of much greater weight and musculature to prevent her going in a certain direction where possibly she might come to harm.

In such cases the motor neurons and muscle-fibres in each particular group used are all functioning without reserve—inhibition has been abrogated. There is a drug that has a similar effect on inhibition—caffeine. Caffeine, according to Prof. C. Lovatt Evans (6), " diminishes every inhibitory process."

The writer has given caffeine in the " interval " between manic

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phases, and has found that it precipitates slight manic attacks which last for a day or so, and " the interval " is prolonged to two or three times its ordinary duration except for these occasional little manic episodes; and further, that when the true recurrent attack takes place it is not so exuberant, language, behaviour and excitement are definitely modified for the better, and the mentality is not so confused; impulse is more controllable, and there are fewer records requiring entry in the minor accidents book. The inhibitory clutch seems to begin to grip as the manic " attack " passes off, and summation may be said to begin to wax as the manic " attack " wanes.

Administered during " the interval " caffeine lifts the clutch and a minor manical "attack" is precipitated. It is this effect of caffeine occurring several times during " the interval " that prolongs the duration of " the interval "; and although I have not given caffeine during " the attack " when it subsequently developed, yet " the attack " is potently modified as compared with an " attack " following an " interval " in which caffeine has not been administered. Strychnine is said to have the same effect on inhibition as caffeine. During " the interval " in recurrent mania " block-reaction" causes an up-stream summation, irradiation to associated neurons follows, inhibition prevents the expression of this hyper-excitation (efferently) from these associated by-paths, summation proceeds until it is too much for the powers of inhibition and " the attack " is then precipitated. The two leading factors in the case are " block-reaction " and " inhibition of expression through by-path "; these cause increasing summation until the inhibition is overcome. The mechanism of recurrency runs smoothly before our eyes.

I would localize the situation of the states of complete nervous conduction-block nearer to the afferent than the efferent side of the great galaxy of cerebral associational neurons, and in these arcs which serve for organic and cœnæsthetic presentations rather than in the arcs of the sensori-motor system.

With atropine, by the way, I have been successful in holding up the threatened precipitation of the manic attacks for a day or two, but those patients who had this treatment seemed to sit very taut and quiet, in apparent misery. Independently of each other, they besought me to refrain from asking them to take this medicine. Their request was granted, and in a short time they were whole-heartedly enjoying the exaltation and freedom of expression so characteristic of the " manic attack." The sympathetic serves

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for the expression of unconscious emotion. Atropine blocks conduction in the myo-neural junctions of the autonomic part of the sympathetic system. *Atropine administered during the full-going manic attack modifies its expression considerably—the expression of reverberation in the sympathetic is damped down.*

After $\frac{1}{200}$ gr. of pilocarpine I have observed a maniacal patient, who had been ceaselessly perambulating the floor of the ward, suddenly sit down, and in a calm assured voice state that she was

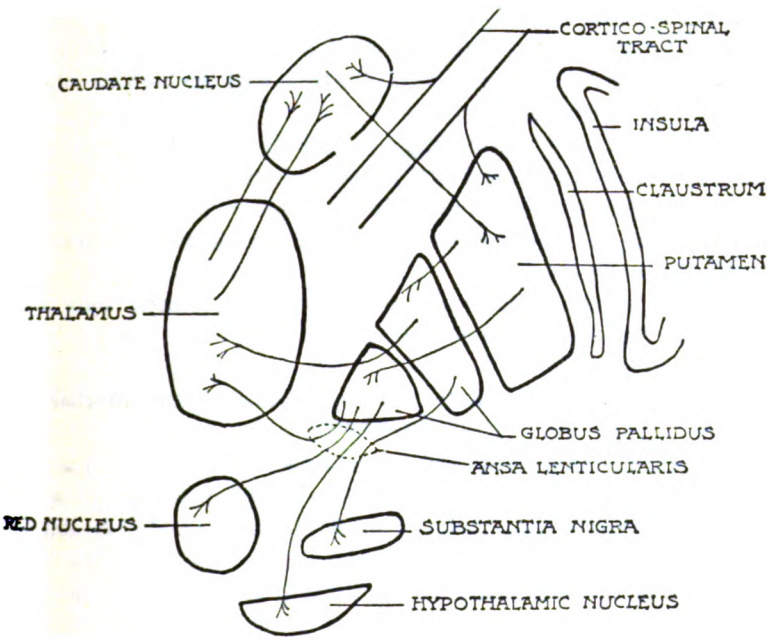

FIG. 6.—Fibre connections of the corpus striatum. (After Ranson.)

now quite cured and well. She was; and soon she was discharged recovered. This was many years ago, and the patient has not had any recurrence since.

(b) *The depressive phase.*—In health, physiological functioning gives a feeling of well-being.

When an excess of excitation floods this physiological state, as in mania, functioning is put into high gear, the feeling of well-being rises to exaltation, and ideas come speedily to the surface, to dart about with the Brownian-like movements of a restless irresponsibility.

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Toxæmic conditions of the body, on the other hand, interfere with physiological functioning, and a feeling of ill-being is experienced.

Naturally a state of facilitation becomes created in the high arcs that subserve the conduction of these organic impulses which make up the cœnæsthetic record of the feeling of ill-being.

All other arcs, especially in their synapses, instead of becoming subject to facilitation, have their thresholds for conduction raised by the state of toxæmia.

Now, on top of these feelings of ill-being comes the precipitation of a flood of excitation from "block-reaction"; naturally it will flow into the channels of facilitation, and the high thresholds will be left "high and dry."

Thus the feeling of ill-being becomes so strongly accentuated that the whole attention is drawn towards this point of suffering, and so engrossingly held that only the depressive ideation relative to this-thing-that-is-being-attended-to is permitted to enter into the field of consciousness.

The mechanism is the same as in the manic attack, only it is operating under modified conditions.

The Source of Excitation in the Epilepsies, and the Mechanism of Recurrency.

The late Sir Frederick Mott maintained that there was a real kinship between mania and epilepsy. In epilepsy I would again put forward the two factors of "block-reaction" and "inhibition of the extension of hyper-excitation along the by-paths" as operative in the summation of the excitation and in the precipitation of the epileptic attack—when the inhibition is overcome by the major force of the summation.

Be the lesion that causes the block reaction gross or molecular, its situation must be among a different system of nervous arcs from those involved in the initiation of the manic-depressive syndrome, since the energy summated and precipitated in the epileptic is so much more speedily acquired and dissipated than in the manic or depressive patient.

Let us nominate the sensori-motor system as the one involved. Its reactions are always notably speedy. The epileptic attack is notable, apart from the loss of consciousness, decidedly as a motor manifestation.

The manic attack, however, might be said to be primarily an emotional (psychical) manifestation, with motor concomitants.

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In the manic-depressive "interval" the patient exhibits a subdued mood, a paucity of affect, and a slight lack of initiative. In the epileptic "interval," apart from a slight retardation in speech suggestive of states of conduction-block, there seems to be a definite and remarkable condition of persistent motor urge. In some cases this motor urge becomes obsessive—as if an echo of the tension of the undischarged summation were ceaselessly reverberating among associational neurons stationed just slightly prior, in the arcs, to the higher motor neurons.

Bromide retards the onset of the epileptic attack; and Prof. C. Lovatt Evans (6) tells us how it is able to do so: "Bromide has no depressant action on the central nervous system," he says, "but rather a specific reinforcing effect upon all its inhibitory activities." It reinforces inhibition. It retards the onset of the epileptic attack. Nothing further is wanted; and I now place the two factors—"block-reaction through by-path" and the "conquest of inhibition"—in your hands to link together as a working mechanism explanatory, not only of the manic-depressive syndromes and the epilepsies, but also of their recurrent manifestation.

In the psychical realm the apposition of conditions of block and hyper-excitation is not unfamiliar. In delusion there is the "blind spot" in judgment. Some component or other is suffering from a condition of persistent or temporary block, and the defective conclusion has a hyper-intensity that causes it to take precedence among the ordinary cursory ideas in the mind. In mental dissociation it is the dissociate ideation which has the mandate in mentation.

In hallucination the presentation of reality suffers block, and the pathological representation that is substituted has a vividness whose very intensity convinces the subject that its reality is undisputable. Then, again, there is the well-known Freudian mechanism of the repressed, or buried, complex of conflict, and the uprising, through by-paths, of affect so powerful as to thoroughly dominate ideation. It is all very intriguing; but, for the moment, the writer is content if he can establish the neuro-pathological principle of a purely physical process of block-reaction through by-path.

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THE CEREBRO-SPINAL FLUID PRESSURE IN HYDROCEPHALUS AND MICROCEPHALUS.

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SEVERAL fallacies may occur in the recording of the pressure of the cerebro-spinal fluid. These fallacies may be related to (1) the type of apparatus used, (2) movements of the patient, and (3) reading of the pressure.

(1) If an apparatus is used with which a few drops of fluid are lost before the reading is taken, the pressure of the fluid is artificially lowered.

(2) Movements of the patient, including those connected with speech, respiration, sighing or coughing will increase the pressure.

(3) The pressure recorded immediately after the needle has entered the spinal canal is too high. A pause must be made before the reading is taken.

The observations recorded below were made with the patients lying on the right side and with the legs fully flexed. The head was first fully flexed and then extended as noted in the tables. The patients were adults ranging from 17 to 52 years of age. All punctures were performed in the lumbar region following the injection of novocain. The Seeliger apparatus was used, as no fluid is lost with this apparatus. An interval of at least three minutes was allowed after the needle had entered the canal before the reading was taken.

As the level of the fluid in the manometer is continually varying two readings were invariably taken, the upper and the lower limits of the variation. In order to eliminate false results due to muscle action, readings from restless patients have been eliminated from the tables, but despite this, the variations will be noticed to be considerable. These variations are due to the respiratory movements. The effect of respiration cannot be avoided for, if the breath is held, the venous pressure rises, and so raises the fluid pressure.

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For the recumbent position the normal pressure of the cerebro-spinal fluid is stated to be from 100 mm. to 150 mm. by Riddell and Stewart (1), and 100 mm. to 200 mm., with an average of 135 mm., by Levinson (2).

Hydrocephalus.

Among the 12 cases of hydrocephalus examined the extreme limits of pressure varied from 65 mm. to 310 mm. of water with the head flexed, and from 70 mm. to 205 mm. with the head extended. The lowest readings varied from 65 mm. to 290 mm., with a mean of 177 mm., with the head flexed, and from 70 mm. to 195 mm., with a mean of 133 mm., with the head extended. The highest readings varied from 90 mm. to 310 mm., with a mean of 191·5 mm., with the head flexed, and from 80 mm. to 205 mm., with a mean of 143 mm., with the head extended.

Microcephalus.

Among the 12 cases of microcephalus examined, the extreme limits of pressure varied from 65 mm. to 210 mm. of water with the head flexed, and from below 60 mm. to 170 mm. with the head extended. The lowest readings varied from 65 mm. to 180 mm., with a mean of 130·8 mm., with the head flexed, and from less than 60 mm. to 140 mm. with the head extended. The highest readings varied from 75 mm. to 210 mm., with a mean of 147·5 mm., with the head flexed, and from less than 60 mm. to 170 mm. with the head extended.

Tables I and II show the readings obtained.

Table I.—*Hydrocephalus.*

No. of patient.	Sex.	Pressure in mms. with—		Globulin
		Head flexed.	Head extended.	
1	M.	290–310	125–135	Negative.
2	M.	240–250	195–195	,,
3	M.	215–220	160–170	..
4	M.	190–200	150–160	Negative
5	M.	180–200	150–160	,,
6	M.	80–90	70–80	Positive.
7	F.	260–280	195–205	Negative.
8	F.	260–270	160–160	,,
9	F.	160–180	110–130	Positive.
10	F.	100–110	105–105	,,
11	F.	80–100	110–130	Negative.
12	F.	65–100	95–95	,,

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TABLE II.—*Microcephalus.*

No. of patient.	Sex.	Pressure in mms. with— Head flexed.	Head extended.	Globulin.
1	M.	180–210	110–130	..
2	M.	170–190	140–170	Negative.
3	M.	160–180	120–130	,,
4	F.	180–180	120–130	..
5	F.	160–190	110–130	Negative.
6	F.	160–175	110–120	Positive.
7	F.	135–150	85–95	Negative.
8	F.	105–120	85–85	..
9	F.	100–120	140–150	Negative.
10	F.	85–100	100–120	Positive.
11	F.	70–80	85–90	Negative.
12	F.	65–75	Below 60 to below 60	Positive.

Position of head.—Extension of the head lowered the pressure in 10 out of 12 cases of hydrocephalus and in 9 out of 12 cases of microcephalus.

Size of head.—In the diagnosis of microcephalus the shape of the head was considered of more value than the size. The diameters varied from 18½ to 21¾ in. Amongst the cases of hydrocephalus the diameters varied from 22 to 27⅝ in. In the diagnosis of both conditions the proportion of the size of the head to the stature is an essential point, the actual head measurements being of less importance. No relationship could be established in either group between the size of the cranium and the pressure of the fluid.

Sex.—In both groups the females gave lower readings than the males. The means are shown in Table III.

TABLE III.—*Influence of Sex.*

	Males.	Females.
Hydrocephalus, H.F., M.L.	199	154
M.H.	212	173
H.E., M.L.	142	129
M.H.	150	137·5
Microcephalus, H.F., M.L.	170	117
M.H.	193	132
H.E., M.L.	123	106
M.H.	143	115

H.F.=Head flexed. H.E.=Head extended. M.L.=Mean of lowest readings. M.H.=Mean of highest readings.

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Age.—No direct relationship could be established between the ages of the patients and the fluid pressure.

Blood-pressure.—The cerebro-spinal fluid pressure is known to vary with the intra-cranial pressure. In this series no relationship was established with the systolic blood-pressure.

Wassermann reaction.—All fluids gave a negative reaction.

Globulin.—Those fluids that gave a positive reaction for globulin were amongst those giving low readings in each group (Tables I and II).

Summary.

The pressure of the cerebro-spinal fluid in 12 adult cases of hydrocephalus tended to be higher than in 12 adult cases of microcephalus. Although some cases in the hydrocephalic series gave readings higher than normal, others gave readings lower than normal. No case of microcephalus gave readings higher than normal, although some cases gave readings lower than normal. The highest readings occurred amongst the male hydrocephalic cases, whilst the lowest readings occurred amongst the female microcephalic cases. In both groups female cases tended to give lower readings than male.

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THE DIAGNOSIS OF THE PSYCHOSES OF YOUNG ADULTS.*

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PREFACE.

CLOSE co-operation between psychiatry and general medicine is advocated with renewed vigour from time to time. This is a wholly desirable thing, provided that the essential differences between disorders of the individual as a whole and disorders of his several organs are kept clearly before one.

At the present time psychiatry is regarded as being but a small portion of the vast ground covered by the general physician; and the psychiatrist is but a minor officer in the army of specialists—this, at least, if the proportion of medical teaching allotted to mental disorders be any guide.

With things as they are, it is natural that psychiatry should borrow from the field of general medicine methods of approach to its problems which have stood the test of time. He would be brave indeed who would cavil at medicine taking the lead, with psychiatry meekly seeking such crumbs of wisdom as it can. Thus does it come about that people attempt to solve the most recondite problems of human behaviour by studying the bodily excreta, to the exclusion of other less concrete and more elusive factors. It is not denied that derangement of the physical mechanism of the individual may produce aberration of behaviour. Yet, how desperately ill a human being may be: sick to the point of death, while his intellect remains unclouded and his emotional state one of serenity, fortified by hope, whose physical basis it would be hard indeed to locate.

What a contrast to this picture are many mental hospital patients of long standing—suspicious, deluded, estranged from their closest friends, yet apparently robust and in good health.

Does it not seem that there must be a wider creed than mere

* This paper is a digest of a thesis which was submitted for the degree of M.D. of Glasgow University, and which was awarded commendation. The author wishes to express his thanks to the University for permission to publish the paper in this form.

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mechanism and the consideration of ponderable things? Should there not be more interplay of all the forces which the human organism is called upon to meet: less artificial effort to separate the "physical" and the "psychological" and to "pigeon-hole" human nature? In this paper it is sought to show that a wider method of approach to psychiatric problems is needed. This view has been advocated by Clouston and many others since his day; but the fascination of modern biochemical methods is so strong that the tendency at the present time is to attempt to explain behaviour in chemical terms and to neglect the more personal and essentially vital as opposed to the mechanistic aspects of the individual.

My thesis, then, is of an essentially clinical nature, and deals primarily with the methods of approach to certain problems of clinical psychiatry rather than with the minute technicalities of biochemistry and academic psychology on the one hand, and the nosographical methods of descriptive clinicians on the other.

The old descriptive methods of Sydenham, so firmly entrenched in the field of general medicine, must be only part of a wider scheme in solving the problems of behaviour which we see exemplified in the psychoses of young adults.

To put it more formally, this paper sets out to show that the diagnosis, or understanding, of the psychoses of young adults is possible only when the individual case is viewed developmentally in all its aspects—physical, psychological and environmental.

It resolves itself into the following parts: (1) Historical survey. (2) The argument—a defence of the dynamic view-point in psychiatry. (3) Clinical applications.

PART I.

Historical Survey.

(1) The modern period in psychiatry began with the work of Pinel and Tuke (1) at the end of the eighteenth century. They, however, approached mental illness largely from the administrative point of view; and their work does not, therefore, concern the primary objects of this thesis, except in so far as it paved the way for better management of all types of psychiatric cases. The nosography of psychiatry at that time was extremely loose, but even then it was believed that mental illness was some kind of misunderstood disease. Pinel and Tuke placed psychotic patients

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in such an environment that physicians were able to use the methods which Sydenham a century before had applied to pure bodily disorders, namely, the careful tabulation of symptoms in a large number of cases, delineation of clinical types, and the labelling of new individual cases according to their conformity with one or other of these types. As was to be expected, the application of these methods resulted, in the course of time, in the delimitation of certain clinical types of mental disorder. Kahlbaum (2) delineated two such types of illness seen in young adults, namely, "katatonia" and "hebephrenia." He regarded these as "disease entities," but his views were much criticized (Falret and others)(3).

(2) Clouston (4) regarded the "insanity of adolescence" as an entity in itself. It might take one of several forms, and there were no criteria by which one could foretell the ultimate result. Clouston taught the importance of a wide view-point if an understanding of these cases was to be possible; and while taking cerebral physiology as his fundamental basis, he pointed out that the psychology of the individual, his instinctive longings, his education and environment might all play a part in the development of a psychosis.

(3) Kraepelin (5, 6) followed on Kahlbaum's work. He delineated "dementia præcox" and "manic-depressive insanity," each with their subdivisions, by the application of the nosographic method. He continued this method almost to the point of absurdity, so many and diverse were the types he described, but he did create order out of chaos. It appeared that there were cases presenting mixed features of both these alleged entities. So far as young adults were concerned, he showed that almost any form of psychosis might occur in them; and he spoke of each of these forms as if it was a disease entity in itself; but it is doubtful if he meant this in the strict sense. He endorsed the view that a toxæmia was responsible for the production of these conditions, and he produced a certain amount of clinical evidence in favour of this in some cases.

(4) This led to the "toxic," "physiogenic" or "chemical" era in psychiatry, characterized by a great activity in the search for some "substance" which would account for the symptoms. Much of the work was done in an ill-controlled manner by unskilled observers. A few of the positive facts which were arrived at by valid methods were: (*a*) Mott's (7) description of degenerative changes in certain endocrine organs, evidence of disturbed metabolism and of organic neuronic changes, the latter also described by Josephy and Alzheimer; it has been pointed out by Morse (8)

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that Mott did not take sufficient consideration of the clinical type of illness and its duration, the age of the patient, and the cause of death; (*b*) Langfeldt's (9) clinical evidence of disturbance of sympathetic function; (*c*) the demonstration by Goodall, Shera (11), Mann (12) and others of disturbed acid-base regulation in certain cases. (*d*) Gross infection and intoxication have been shown to play a part in the production of psychoses—the "symptomatic psychosis" of Bonhoeffer—but no convincing evidence has yet been produced which would justify the theory that focal sepsis plays an ætiological part in the psychoses designated "dementia præcox" and "manic-depressive insanity."

(5) The psychological school arose with the work of Braid (13), Charcot (14), Janet and others, who demonstrated beyond all doubt that psychological factors are capable of producing psychological, or even physical symptoms. Janet formulated the concept of "dissociation of consciousness," and found that this hypothesis explained some symptoms in certain cases. Freud and McDougall, working quite separately, drew attention to the part played by the instincts and emotion in the production of dissociation, and hence of symptoms. Jung attempted to apply these concepts to dementia præcox, enlarging them with views peculiarly his own, while McCurdy (15) applied them to the manic-depressive psychosis, and each of these observers put forward a theory which rendered certain symptoms intelligible.

(6) The personality in relation to mental illness was studied by Jung (16), who drew attention to two broad types of personality (introvert and extravert), and showed that dementia præcox tended to develop in the introvert type.

Kretschmer (17) enlarged this view-point. He demonstrated a gradually sliding scale of personalities, the schizothymic at one end and the cyclothymic at the other. He showed that when an individual breaks down he does so along the lines of his personality.

Bleuler (18) demonstrated practically the same facts as Kretschmer, and he formulated the question—to be asked in any given case—"To what extent is it schizothymic (or schizophrenic), and to what extent manic-depressive (affective)?"; while he laid down certain criteria for each of these extreme ends of the scale.

(7) The broad clinical view-point of Clouston sees its continuation in Bianchi (19), who formulated his views in a wide manner. He sought in anatomy and physiology the physical basis of the psychoses; but he also emphasized the importance of the "individual psychology"—the unconscious, the environment, etc. He

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pointed out that the task of the physician was to "reconstruct in mental synthesis the diseased personality in front of him," and he fully recognized that a large number of ætiological factors come into play in every case.

Adolf Meyer (20) is another psychiatrist who adopts a broad view-point in approaching his cases. To quote two of his pupils (21), "This biological hypothesis regards mental illness as the cumulative result of unhealthy reactions of the individual mind to its environment, and seeks to trace in a given case all the factors that go to the production of these reactions."

In this formulation there are, undoubtedly, the same essential features as in other wide methods of approach. We have the "individual" nature of mental illness, the dynamic conception of a "reaction to environment," and (implicitly) a "number of factors" which go to produce this reaction.

Possibly the most helpful point in Meyer's method of approach to psychiatric problems, and the one which renders it unique, is what one may call his unification of all the functions of the individual. This is essentially the doctrine of integration, namely that the individual is something more than the sum of his parts. He is a hierarchy of functions, with something new emerging at each level until the highest of all is reached, *viz.*, the mental level, which is the complete expression of the individual as a whole. This, once for all, does away with the old dualistic controversy of "mind" and "body" as a necessary part of psychiatric philosophy.

Meyer's method of approach is to study developmentally the building up of the individual, to analyse and reconstruct the personality, and to consider it in relation to the situation which it is called upon to meet. This is the psycho-biological view-point. Be it noted that this method takes everything into account, including physical changes, and recognizes no incompatibility between "functional" and "organic" psychoses. Meyer does not regard the psychoses as disease entities, but as "reaction types"; and each case is essentially the outcome of factors peculiar to the individual, and therefore calls for a prognosis and management peculiar to itself.

PART II.

In this section it is proposed to produce evidence in support of our proposition, to formulate terms in which the psychoses of young adults may be rendered intelligible, and to pass in critical review

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the methods of approach of certain psychiatric schools of thought, extracting from each such facts and concepts as are likely to prove useful for our purposes.

The Nosographic Method of Diagnosis.

As was pointed out above, the essence of the Kraepelinian method was careful description of symptoms in a vast number of cases, division of cases into groups, according to the similarity of their symptoms, and the labelling of each of these groups. Thus, a number of clinical types are delineated.

Kraepelin demonstrated which clinical types tended towards recovery, which to recovery with probability of relapse, and which to non-recovery. These were, respectively, the toxic exhaustive (confusional) psychoses, manic-depressive insanity and dementia præcox. In a word, he showed that there was a certain relationship between clinical type and ultimate result. He failed, however, to realize that a clinical type or group of symptoms is not necessarily the same thing as a disease entity. A disease entity implies a specific cause and a specific pathology. It has not yet been shown that any such specific cause exists in the psychoses of young adults.

The pathology of the conditions under consideration has not been reported as being constant or specific, even by the most competent observers.

It has been shown that a variety of morbid physical changes occur in many cases; but it has not been proved that these have any ætiological significance; nor have the organs which show these changes been compared with the corresponding organs of non-psychotic persons of similar ages, and existing under similar conditions, to an extent which would justify our regarding them as specific. Conversely, it has not been demonstrated that there is any disease entity in young adults of which a psychosis is a constant symptom, with the rare exception of juvenile general paralysis. On the other hand, it has been shown that many psychoses occur in the absence of any specific disease.

Let us suppose, for a moment, that the Kraepelinian method has found some specific cause and has demonstrated some specific pathology; would that explain the extraordinary diversity of clinical symptoms which we see? Emphatically, no; nor would it explain why some cases of apparent "dementia præcox" end in recovery, and why some cases of "manic-depressive insanity" end in dementia.

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Let us take a concrete example, *viz.*, dementia paralytica. Here we have a specific cause and a specific pathology; we know that the spirochæte is destroying the brain; it is intelligible to us how this progress leads ultimately to dementia—in virtue of our know ledge (such as it is) of cerebral physiology—but that does not explain why, in the early stages of the disease, some patients are elated, others facile, suspicious or hostile, why some have delusions of persecution, others of unworthiness, and others of grandeur.

Consider the case of a woman who develops a psychosis during the puerperium. We commonly find that confusion is a prominent symptom. We have reasonably strong clinical and experimental evidence that this symptom is an indication of disturbance of the associative functions of the cerebrum—in other words, it is indicative of a definite physical disturbance. But in addition to being confused, such a patient may be dull, irritable and suspicious of others; or she may be profoundly depressed, expressing beliefs of her own unworthiness, and attempting to commit suicide; or she may be elated, over-active, and full of expansive schemes for the improvement of the world.

To say that these things are the result of poisoning of the brain does not render them intelligible.

It is remotely, if fancifully, possible that cerebral localization may become so exact, and our knowledge of the selective action of toxins so complete, that an understanding of the case along these lines might be achieved. In the light of our present knowledge, however, this is not a justifiable conclusion; and it has the great danger that it tends to make us think that we have explained the case, and to leave it at that, without utilizing all the means in our power of modifying other factors, which might have ætiological significance and therapeutic value.

It is desirable to make clear at this point that we do not in any way intend to disparage the painstaking efforts of those whose work is directed towards the elucidation of the physical changes which take place in the psychoses; nor do we take exception to the search for some physical cause for such conditions.

The Dynamic View-point—A Scheme of Forces.

We would point out, however, that such cause—if it exists—must operate on something; and that something is the living human being, in part or in whole, including that elusive aspect of him which we call the "mind." Now a human being is not a fixed,

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static thing. He is living, ever changing, dynamic; and it is, therefore, valid to speak of the causes of a psychosis and of that on which they operate as if they were forces. This being so, we may regard the phenomena which we call the symptoms of a psychosis as the resultant of these forces.

It is quite illogical to attempt to understand the resultant by studying only one of the component forces. No matter how minutely we study a single component, we cannot explain the resultant unless we study the other components also.

For this reason, the search for some single, specific cause of a psychosis, even it it be successful, cannot explain the psychosis. It is necessary to know the nature of the subject in whom the psychosis develops; and this is obviously an individual matter, not only as regards the "mind," but also as regards the peculiarities of body-chemistry and constitution generally.

The resultant (*i.e.*, the symptom-complex), as we know from clinical observation, differs in detail in every case, so that, even if one component (causal factor) be shown to be constant, the others may be of infinite variety.

In each case, therefore, there is a different explanation of the symptoms.

Therefore, all cases must be approached individually.

The nosographical method of diagnosis is useful in so far as it enables us to communicate to others the kind of case we are thinking about; and, incidentally, to prognosticate in an empirical way. Such a method is essentially static. It consists in taking the symptoms as we find them at the time of examination, and comparing them with our concept of other cases showing similar symptoms. We are, however, dealing with the resultant of dynamic, ever-changing forces. Our aim should be to resolve the resultant into its components. Clearly, if this be a valid metaphor—indeed, it is more than a metaphor, for we are aware of no other terms which are more nearly capable of rendering our subject intelligible—we cannot so resolve the resultant by merely studying it at any one point in its path. Nor, for that matter, would it be of much assistance to study any or all of the components at any one point.

We must trace the resultant and each one of its component forces as far back as we can. We must form some concept of when each component came into relationship with the individual; the amount of energy behind it; and the direction towards which it will deflect the resultant. To know these things involves a process of tracing back the life of the individual, everything that has come into

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relationship with him, and their effects on him; and it involves a study of his (individual) origin.

Thus, we have established that, in order to understand the psychoses of young adults, the question must be approached individually; also that the individual case must be studied developmentally.

Component Ætiological Forces.

It is still necessary to show that the case must be studied in all its aspects. To do this we must define more closely what these aspects are—that is, we must inquire what components can possibly enter into our scheme of forces. These would appear to be—

(1) *Inherited forces.*—The individual as he was at birth.

Can we resolve this further? Undoubtedly we can.

At birth the individual begins a separate existence, endowed with certain potentialities. We want to know whether this endowment is average, whether, *ab initio*, there is some defect in his physical nature, or if we may infer, from a study of his ancestry, the probability of some of his potentialities being abnormal in some way. In a word, we want to know what he is made of.

(2) *Environmental forces.*—(*a*) Developmental forces.

We know from centuries of experience in the field of education that the growing individual is an exceedingly plastic creation.

At first the infant's behaviour seems to be a mass of instinctive and reflex actions, which occur in response to appropriate situations. The emotions are near the surface, simple, easily aroused, and without controlling influence. The intellectual functions of memory and orientation are not apparent for many months, and the higher function of inhibition does not appear until later still; whilst last of all the highest function of integration, control and moulding of all these functions come into play.

It has been abundantly shown that the development of these functions corresponds with that of the brain. It has also been shown that failure of development, disease of, or injury to, the brain may, and usually does, interfere with the development of these functions. But—and this is the crux of the situation—it is not valid to argue from that fact that where we find disturbance of these functions, or interference with their development, we must, of necessity, have some physical disturbance of the brain. The fallacy of this argument is amply demonstrated in the clinical and pathological studies which have revealed the fact that such

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disturbance of function may occur in the absence of demonstrable brain lesion.

All that we are justified in saying, from our knowledge of the contemporaneous development of structure and function, is that the structural development renders the functional development possible. No reasonable person will deny that—apart altogether from brain lesion—physical ill-health, accident or deformity can, by restricting the field of activity, and in other ways, modify such development; and it is also apparent that such things as example, scholastic education and the inculcation of religious beliefs can profoundly modify the functional development of the individual.

It may be that these modifications have their neurological correlate, according to the "Law of Neural Habit," in the "channelling" of particular cerebral pathways; it may be that by the minute study of the synapse the neurologists will be able to tell us precisely what is happening in the brain; but does that help us much? The all-important fact is that forces in the environment may completely modify the functional development of the individual; and, therefore, they must receive consideration in our scheme, not only, be it noted, as a means of explaining a psychosis, but also as a means of modifying its course.

Now the study of the forces in the environment in which the individual has developed only helps us if we consider how they have modified the raw material. It is the action of these developmental forces upon the inherited forces and the reaction of the latter which result in the formation of character or personality. The patient's instinctive energies have had to submit to the obstructions of convention, religious beliefs, superstitions; and as long as the balance between these things (*i.e.*, the integrative function) is maintained, there is no psychosis. If, however, some greater obstruction occurs, or if the integrative functions break down, the resultant of these forces may be a psychosis. Like any problem in dynamics, it is a relative matter. We must consider the pre-psychotic personality in relation to the situation which it is called upon to meet before we can understand why a psychosis has occurred.

(*b*) Precipitating forces, *i.e.*, the situation which the pre-psychotic personality is called upon to meet.

These are of three kinds:

(i) External (financial disaster, bereavement, etc.).

(ii) Personal psychological forces ("conflict"—*i.e.*, incompatibility of desires and beliefs, or of ambitions and capabilities, etc.).

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(iii) Personal physical forces (injury, disease or poisoning of the body as a whole, and of the brain in particular).

(i) *External Precipitating Forces.*

These are so varied and their bearing on the case is generally so apparent that it is useless to attempt to classify them.

No doubt, long before this stage of the argument, the recollection of cases of apparently spontaneous psychoses will have presented itself to the reader. It is desirable, therefore, to indicate briefly how our scheme may meet even these.

The essential thing is that we should know enough of the component forces. It is such common experience as to need no actual example here that some psychoses in young adults develop apparently "out of the blue." In our study of the family history, we may not alight on any fact which would justify us in inferring some abnormal endowment of potentialities (that, of course, does not necessarily mean that such abnormalites do not exist). Our study of the forces of the environment during the period of the patient's development may show nothing unusual; there may not have been any apparent "precipitating forces"—that is, the patient may not appear to have been called upon to meet any unusual or special obstruction to his progress; and, further, may be in apparently good health. Yet his development diverts from the normal, and he becomes psychotic. How is our argument to meet such a case? It meets it by saying that we have not taken into account the personal psychological and physical forces. We must, therefore, consider these forces further.

(ii) *Personal Psychological Forces.*

Our study of a case may not show that anything unusual has happened in the environment; but, for all that, it is possible that even the usual run of events may have had an unusual effect on the patient. This only the patient can tell us; we must know the subjective aspects of the case. There is nothing inherently unusual in an adolescent youth being bereft of his parents; yet, such an event may very well precede the psychosis in the kind of case of, which we are speaking. Of itself, it does not explain the psychosis; but if we know something of the youth's attitude to his parents, we may—without evoking any truly Freudian principles—render the psychosis intelligible. It may be that he accepted his parents' word

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without question in everything; that he subordinate his own strivings to their wishes; that, in fact, he never trained himself to be independent. He is suddenly called upon to declare his independence —a process which normally takes many years. Is it not intelligible how he may slip into a helpless, hopeless, apathetic, inactive condition, shunning the society of others? Perhaps, too, because of religious education he may believe that this bereavement is a punishment to him because of some real or fancied childish error which to him is a great sin (*e.g.*, masturbation). Thus, although he may have been, objectively, a model child, obedient, unobtrusive, and so forth, and although his religious beliefs may be perfectly orthodox, the knowledge of his attitude to his parents, brought into relationship with his bereavement and religious beliefs, may go far towards helping us to understand his psychosis.

Such a situation is, however, very simple. The patient, moreover, is fully conscious of the principal conflicting forces.

Can it be that there are other forces in the psychological constitution of the individual, of which he is not conscious?

In Part I we referred to the work of the psychological school. How much of that work may we accept as valid and directly applicable to our problem? Setting aside the differences in actual phraseology used by the different exponents of this school, we would say that the concept of the unconscious seems to us a useful and valid one, in its broad sense—that we are unaware of certain of our own psychological activities.

We cannot agree with Freud, however, that the content of the unconscious is solely sexual striving, even allowing for the width of meaning which he gives the term; nor can we agree with his elaboration of this theme—that such strivings properly belong to the periods of infancy and childhood.

We can also usefully accept the concept of "repression." There is no doubt that a person can "put thoughts out of his mind"; and there is no doubt that he does tend to "put out of his mind" thoughts which have reference to crude instinctive desires (not necessarily sexual) which are unacceptable to his "better self," or, as McDougall has it, to which his self-regarding sentiment is opposed.

This involves the acceptance of the concept of "conflict" of instinctive desires with one another and with inhibitions of all kinds.

These conflicts may be conscious or unconscious, not in a sharply divided way, but in the sense that the subject may view them

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clearly in the sharp focus of full awareness, or dimly in the mists of wandering fancy.

We must admit that the content of the unconscious can be a component in our scheme of forces.

Like the individual as a whole, the content of the unconscious is not to be conceived as being a fixed, stated thing. It is a living, dynamic series of processes or forces, each, we may say, the mental counterpart of some biological mode of reaction, which is repressed or debarred from expression, perhaps because it is inacceptable to the individual as a whole, perhaps from fear of the consequences, perhaps from lack of the necessary vigour or energy to overcome the obstructions in its path.

Is it likely, if great biological forces—such as the reproductive or protective instincts—have once been aroused to such an extent as to require repression, that their psychological counterparts will lie dormant in the subconscious and exert no influence on the individual as a whole? Hardly so. There must be a perpetual warring between these forces in relation to each other, and in relation to the individual as a whole. Is it not intelligible how some such thwarted force may modify the whole life of the individual?

Is it not intelligible that the " repressing " forces may be weakened by physical ill-health, or by some environmental disaster; or how the " repressed " forces may be stimulated anew by some extraneous event, and burst the bonds of their repression?

Is it not intelligible how such a force, denied for ever the possibility of achieving its purpose in reality, may be so strong and insistent as to achieve it in phantasy, through its psychological counterparts?

Such phantasies undoubtedly have their neurological basis. That does not invalidate the terms in which we speak of them. We admit that the phantasies of psychotic patients are the psychological counterparts of repressed, instinctive forces; and we admit that such phantasies may disguise the real nature of the forces behind them. Then only do certain symptoms, particularly certain hallucinatory experiences, become intelligible. We do not entirely accept the Freudian scheme of " symbolization," but we do admit disguise of crude thoughts, and we seek the reasons for this disguise in the self-regarding sentiment.

(iii) *Personal Physical Forces.*

The symptom of confusion is such a constant accompaniment of disease, injury or poisoning of the brain that its presence should

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always indicate a search for some major ætiological force in the somatic field.

This search must be of the most detailed nature, and should, if necessary, employ all the armamentarium of the modern clinical pathologist. It would be out of place at this point to go into technical details. Some comment, however, seems necessary on the efforts of the "physiogenic" school to demonstrate the presence of organic disease processes in psychoses of which confusion is not a symptom—such conditions as simple states of depression or excitement or delusional states without impairment of orientation, or memory. Many exponents of this physiogenic school seem to be convinced that some "toxæmia" is responsible for these conditions.

This *naïve* conception is opposed to the law which states that the latest structure (and function) to be evolved is the first to be impaired when the organism is attacked by some toxæmia.

Now, from our studies of evolution, we know that the mental functions and their neurological counterparts developed in this order: instinct and emotion; orientation and memory; inhibition of instinctive action; integration. We should expect, therefore, that if the neurological basis of these functions is attacked by a toxæmia, we should see derangement of them occurring, first as loss of integration; then as loss of control (inhibition) of instinctive functions; then disorientation and loss of memory; finally, a failure of the emotional and instinctive functions. This order is followed precisely in the effects on the brain of such drugs as alcohol and chloroform, and in disease processes like dementia paralytica or poisoning by puerperal toxins. But in many psychoses we observe profound changes in the emotional nature, particularly in the way of the development of false beliefs (it has been demonstrated by McDougall and others that belief, particularly belief regarding the person and belief by suggestion, are essentially emotional functions), without any disorientation or loss of memory, while the integrative functions do not seem to be in any way impaired. Such patients are neat, tidy, orderly; in a word, their "personality" is well preserved. Clearly, then, unless the physiogenic school can show that their "toxin" is selective to an almost inconceivable degree, their hypothesis of toxæmia in this type of psychosis is not tenable.

With the endocrinologists the position is rather different. If they can prove that the endocrine glands are the physical basis of instinctive energy, they will have gone far towards completion

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of our understanding of the psychoses, and their work might be incorporated in a general scheme of "forces" such as we have outlined.

A final word to the exponents of the physiogenic school: In order to prove their case, they must show not only that toxæmia exists, but that it has ætiological value. We have heard much of intestinal toxæmia. We do not dispute that it exists; but have those who seek to ascribe ætiological value to it paused to consider that it may be the result of the altered diet, lack of exercise and mode of life generally of one whose behaviour is becoming abnormal because of other things? To make their point they must prove that this is not so. Have they paused to consider that such a toxæmia is readily amenable to treatment by ordinary medical methods, as indeed are toxæmias from teeth, tonsils and appendices? We may clear up the toxæmia. We may get our patient into such a physical condition that the application of all our standard clinical methods reveals only that he is in robust health. He may live in an asylum that long healthy life which is such a constant accompaniment of the deluded state in which he is, whilst the autopsy which eventually follows reveals only the disease of which he died and the normal changes of old age.

The argument in support of our proposition is concluded. We have formulated terms in which the psychoses of young adults may be rendered intelligible, namely, the concept of a scheme of forces of which the psychosis is the resultant, and the ætiological factors are the components. Placed in summary form this scheme is:

I. *Inherited forces* (individual at birth) acted on by and reacting to—

II. *Environmental forces*:

(1) Developmental forces, resulting in ***character*** or *personality*, which is called upon to meet—

(2) Precipitating forces:

(*a*) External;

(*b*) Personal psychological;

(*c*) Personal physical;

resulting in psychosis.

PART III.

It was said, in Part II, that in order to understand the scheme of forces, we must study (*a*) the resultant and (*b*) the components. Translated into clinical terms, this means a study of (*a*) the clinical

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picture and (*b*) the personal and family history. We should expect to find in (*a*) and (*b*) some indications of the major forces at work, and it then remains to unravel them.

The Clinical Picture.

(i) *Method of making a record.*—The clinical picture should be a record of fact, not inference. Such an ideal may be achieved in only one way namely, by writing down what the patient says and does, and the setting in which he says or does it. In other words, the case-record should consist of question and answer, and careful description of behaviour of the patient. Anything else is a matter of opinion, and only when we adhere to what the patient says and does are we true recorders of actual fact.

Now, fixed, scheduled forms of examination do not lend themselves readily to the description of such diverse things as the forms of individual human behaviour. The method of applying what is really the old "faculty psychology" to clinical psychiatry and making notes under such headings as "the will," "the moral sense," does not seem to us either necessary or helpful. It is, however, useful to recognize three facts, and to group our clinical data under these headings. They are as follows:

(*a*) Any individual thinks along more or less personal trends, *i.e.*, he has a content of thought which is peculiar to himself.

(*b*) He has, at a given time, a certain emotional state which bears some relationship to his content of thought.

(*c*) He is capable of performing simple acts of reasoning.

In addition, therefore, to our description of the objective behaviour of the patient, we should endeavour to arrange our questions to the patient in such a way as to determine—

(a) *The content of thought and mental trend.*—What is the patient thinking about? Does it concern itself with real or hallucinatory experiences? Are his beliefs generally accepted as correct or erroneous?

Apart from such definite components as hallucinations and delusions in the content of thought, we require to know what the trend of the thinking process is. Thus, without amounting to delusions, do the patient's thoughts tend to be self-condemnatory or ambitious or grudging?

(b) *The emotional state and its relationship to the content of thought and mental trend.*—In spite of numerous attempts to draw up some purely objective, physical criterion of emotion, such as the

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"psycho-galvanic reflex," for clinical purposes we must at present be with :

(i) The motor expressions of emotion (attitude, facial expression, gesticulation).

(ii) The patient's own description of his emotional state —his "feelings" or "spirits."

In addition to determining the emotional state itself, we should have some statement from the patient regarding his reason for being in such a state, *e.g.*, "Why are you miserable?" "Because I've done something awful." Here we have an emotional state and a mental trend of self-condemnation. This emotion and this trend are in consonance or "harmony" with each other, and disintegration of the psychic functions is, therefore, not present. We should push the inquiry further, with a view to discovering if his belief that he has done something awful is his way of explaining to himself his feeling of misery, or whether he came to believe in the first place that he had done something awful and was miserable because of that. In other words, we want to know which came first, the mood of depression or the false belief.

It is of great importance to determine whether the mood and the mental trend are in harmony with each other or not. As an example of disharmony between mood and thought, we have a patient who states that he is perfectly happy, and, with a smile on his face, demands that one should "do away" with him.

Not only must we determine the congruity or otherwise of the mood and thought content, but if, in our conversation with the patient, or in our study of the history, we learn that there has been some definite precipitating situation, such as a sudden bereavement or financial loss, or unfortunate love affair, we must consider whether the mood is compatible with this or not. For example, one has seen states of elation and excitement follow upon the loss of a dearly beloved parent, and we must endeavour to unravel our component forces to explain how this can come about.

(c) *The state of the intellectual functions.*—This involves a study of the patient's orientation, memory for recent and remote events, scholastic knowledge, and general knowledge of current events, ability to do simple tests of mental retention, calculations, and ability to detect absurdities in specially made-up stories.

The methods of determining these things are so well known already that they require no elaboration here. Their importance lies in the fact that they tell us the clearness or otherwise of consciousness—whether the patient is fully alive to his surroundings,

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or whether he is really clouded and in a sort of day-dream, or even delirious state.

The Labelling of the Psychosis.

It now remains to apply some name to the psychosis, and to seek some indication of the major ætiological forces at work.

As long as the name of the psychosis is standardized it matters but little what name we apply. There is nothing inherently wrong with Clouston's term "adolescent insanity," except that the word insanity is unfortunate, because of the stigma attached to it.

"Adolescent psychosis" would be a perfectly justifiable term, but is too limiting as regards age. We can usefully go a little further than that in most cases. We recognize that there are some cases characterized clinically by disintegration of the mental functions, and others by excessive display of emotion; while there are yet others presenting a mixture of these features. Further, in any or all of these cases, clouding of consciousness, confusion or delirium may be a prominent symptom. For descriptive purposes, then, we may usefully recognize the following clinical types of psychoses of young adults:

Clinical Criteria.	*Names of Psychoses.*
1. Disintegration of psychic functions, particularly disharmony between mood and thought content.	1. The schizophrenic psychoses.
2. Excessive display of any emotion which is in harmony with the content of thought and most appropriate to the situation of the moment.	2. The affective psychoses.
3. Persistent hallucinations or delusions of a personal nature, occurring without disintegration of the psychic functions and in a setting of clear, unclouded consciousness.	3. The paranoid psychoses.
4. Clouding of consciousness, delirium, amnesia, disorientation and other impairments of intellectual functions.	4. The organic psychoses: (*a*) Psychoses with organic brain disease. (*b*) Psychoses with other somatic disease.

This is not a rigid subdivision of clinical types. We really have a graduated scale of cases, with pure schizophrenia at one end and pure affective disorder at the other. We must make allowance for the "in-between" cases, which at one period of their course may resemble one type, and at another time another type, or which may present at the same time mixed features of schizophrenia and affective disorders. We could call such a case "schizophrenia

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with affective features" or "affective disorder with schizophrenic features," according to its proximity to one or other end of the scale. Further, it is correct to speak of an organic psychosis with schizophrenic or affective features as the case may be.

The most important thing of all is that we should recognize that by attaching a name to the psychosis we have not rendered it intelligible, nor have we implicitly forecasted its course. We should be quite clear that there is no hard and fast distinction between the types indicated above. They are merely names devised to enable us to communicate to others what sort of mental symptoms we are thinking of.

Reconstruction of the Psychosis.

The indications of the major ætiological forces at work.—It is desirable to make clear at the beginning of this passage that whatever forces are indicated clinically to be of major importance, we must investigate all the forces, major and minor, before our explanation of the case is complete. For clinical purposes, however, there is often strong indication of one force being, as it were, the dominating one; hence, we may be able to formulate, according to the particular force at work, a prognosis early in our investigation of the case, and to order our management of the case accordingly.

The first and most important thing is to determine whether the psychosis presents itself in a setting of intellectual clearness or cloudiness.

If consciousness is clouded, *i.e.*, if the patient is in a confused or delirious state, we are justified in concluding that the physical associative apparatus (*i.e.*, certain parts of the cerebrum) is the seat of morbid physical changes, either of the nature of organic brain disease or of the nature of some poisoning process.

We may take it, therefore, that some gross physical disorder is a major component force in the production of a psychosis of this clinical type.

If the ordinary routine physical examination reveals nothing abnormal, we should not be content; we must employ special methods, directed to detect obscure neurological conditions and obscure infective or toxæmic processes. So far as the technical elaborations of these methods are concerned, we do not need to discuss them here. If need be, the whole battery of modern clinical research must be brought to bear on the individual case. The need for this is indicated, as already mentioned, by two things: first, the presence of intellectual impairment as a symptom, and,

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second, the failure of ordinary clinical methods to detect organic disease. In such cases the physical forces at work are often arrived at only by a process of elimination, which is best carried out in this order:

(1) Extended neurological examination by special methods.

(2) Search for general evidence of infective processes (temperature, blood-count, etc.), followed, if such evidence be present, by examination of probable sites of infection (teeth, tonsils, etc.).

(3) Special examinations directed towards real metabolic disorders, as opposed to fanciful interpretation of an alleged deviation from the normal of some function whose ordinary criteria are not properly known; such real disorders as gout, certain forms of nephritis, diabetes.

(4) Search for evidence (possibly historical) of exogenous poisons (alcohol, lead, arsenic, morphine, etc.).

Such, then, is a brief outline of the methods of investigation to be adopted in the organic group of psychoses, *i.e.*, those psychoses where intellectual impairment is a symptom and a pointer to the major ætiological forces being found in the somatic field.

Supposing that intellectual impairment is not found; where, then, should the major ætiological forces be sought, and what are the pointers that lead us to them?

The examination of the patient's mental trend and content of thought should be considered next. Is there any topic which tends to be dominant? Does the patient harp on some environmental disaster which has immediately preceded his illness, or on some great personal changes in his circumstances, such as marriage or religious conversion? Is his content of thought mainly concerned with what may be called his "inner life"—ideas of sin, religious exaltation, marital infidelity, or the sex-topic in general? In some patients, of course, the content of thought is very wide, as manifested by a diffuse stream of talk, jumping from subject to subject; but even here, if a careful *verbatim* record of the patient's spontaneous talk has been made, it is usually found that some topic is dominant.

Having found which is the dominant mental trend, the next thing is to investigate this as fully as possible. This brings us to the consideration of the history of the case. A history taken from one person does not usually cover all the ground. We must get to know the patient from several angles. We should, if possible, have a statement not only from near relatives, but from employers, workmates, personal friends, private physician, and so forth. It is in

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this extended history-taking that a social service, as managed by most modern psychiatric clinics, is so essential.

The family history gives us some idea of the raw material as it were. The history of the development of the individual leads up to a description of the personality of the patient before he became ill; and the story of his life tells us of the situations which he was called upon to meet. Thus, we know the equipment of the patient and the factors with which he had to deal; and so we get a dynamic conception of the case.

If there was some environmental happening which upset the patient, the next step is to discuss this as fully as possible with him and endeavour to find out why he should be so upset by it. The reason for this generally hangs on the patient's mental attitude to himself and to the world about him. This is so essentially an individual and personal matter that it is idle to attempt to enumerate or classify the possible factors which may play a part. It is this type of case which illustrates the dynamic conception of mental illness so well. The illness is essentially a reaction to a situation; and the management of the case should be an attempt to alter the patient's mental attitude, and to re-educate his affective disposition so that he may meet matters in a more philosophical way.

If the history has not indicated any environmental happening which could be regarded as an ætiological factor, we must return once more to the examination of the mental trend and content of thought. We have, thus far, eliminated gross physical disease and environmental disaster from the possible major ætiological forces. According to our scheme, there remains only some "inner difficulty," some essential maladjustment, as a major cause of the psychosis. To find this involves long, intimate talks with the patient, taking into consideration the general nature of the mental trend, the hallucinations or the delusions. Are these in the main sexual, self-accusatory, grandiose or what? According to the topic indicated, we should guide the patient so as to disclose his inner conflicts and difficulties. What is he trying to grapple with? Is he so sensitive that he cannot bring himself to seek aid on some intimate matter, but must needs attempt to deal with it himself, although possibly ill-equipped to do so? The elucidation of such a problem may take months; success depends upon our ability to make the patient talk, and for this reason slow and gentle inspiring of confidence is to be aimed at rather than any attempt at bullying or forcing a statement from the patient. We want the patient's own version of his life, his hopes, fears and ambitions; the

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way in which things, apparently trivial to some other person, affected him deeply.

Again, our aim should be re-education of the patient's mental attitude. For its success, such a plan demands that these investigations shall take place early in the course of the psychosis. Psychotic modes of thought and behaviour soon become habits with a patient; and once such habits are firmly formed, it is unlikely that any amount of re-educative efforts will break them. For this reason it is essential that the psychiatrist should be brought into contact with the early case. Hence the need for legislative reforms and the development of psychiatric clinics, particularly in this country, which seems to be so far behind her psychiatric competitors abroad. Early diagnosis is the thing to aim at; and this can only be achieved by a better psychiatric education of the medical profession, and the removal from the lay mind of the stigma, with all its policy of concealment, which is attached to mental illness.

Illustrative Cases.

CASE 1.—Illustrating a complicated reaction to a situation, and the danger of empirical prognostication.

Miss W. T—, æt. 32, a saleswoman, was admitted to the Glasgow Royal Mental Hospital on October 13, 1926. She was said to have been ill for four months, and had already been for three months in a mental hospital at R—. Beyond the fact that she was thin, and had a coated tongue, there was no abnormality to be made out in her physical condition.

She was in a state of considerable excitement, smiling, grimacing, rolling her eyes, and muttering unintelligibly to herself. She constantly changed her position and made bowing movements. She fell voluntarily to the floor in a silly sort of way. Conversation with her was very difficult. The following is an example of it:

Q. "Do you know what place this is?"

A. "I didn't expect so much for a title; . . . it seems so humble to do that" (shifting to and fro on her seat); "I've got to do this."

Q. "Who tells you to do it?"

A. "I didn't think you'd like that at all."

She named the day of the week correctly, but her answers to other questions, put with a view to estimating her intellectual state, were irrelevant, as shown above.

For some days she was unresponsive, giggling, grimacing and uncooperatives While still in this excited state she was persuaded to attend the Hospital dances. She danced well, but was answering "the voices" all the time. Oddities of behaviour were marked; she would slide on to the floor, and wave her legs about; she stated that she was Lady G—.

About one month after admission the excitement began to abate, and although still foolish, hallucinated and impulsive, she was more accessible, and it was possible to learn something of her content of thought. The most prominent feature of this was that she heard the voices of her mother, father and brother calling her; and she believed that her brother was in the next ward.

A month later there was a further access of excitement, and little more could be got from her in conversation. Six months after admission she began to improve. She put on weight, became careful of her appearance, neat and orderly in dress.

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Eight months after admission she was very much improved and was able to discuss her illness in a detached way. She said she knew that she had been very ill, but remembered practically nothing of her illness. She believed that the shock of her mother's death had made her ill. She stated that she used to be very dependent on her mother; she used to go to her with every little trouble, and had never really broken the bonds of childhood.

She was discharged recovered eight and a half months after admission. I had an opportunity of seeing her at the Western Infirmary Psychiatric Clinic three months later. She was bright, steady, and sure of herself, and apparently quite well.

The history of this case is as follows: The patient came of good stock, and developed normally through the infantile and school periods. She displayed no neurotic traits. As a child she showed initiative and a great capacity for make-believe, being perfectly content to be left alone to play with her toys and "build castles." She got on well with other boys and girls, and was a prizewinner at school. At the age of fourteen she entered a thread mill, did well, and rose to be an "examiner." After this she entered a drapery store, where she was employed for eight years prior to her illness.

Her medical history was uneventful, except that she had pneumonia at the age of seven. As an adult she was a good, steady worker, affectionate, and a home-lover. She "turned down a good man" because she "had a good home and a good situation." She was not, however, prudish or priggish, and was fond of children. She was beloved of all. People used to go to her with their troubles. She was fond of music and dancing, and was considered the life and soul of any party. The one unusual thing which stood out in her personality was her attitude to her mother. This was genuinely childish. Even as an adult she slept with her mother. They used to lie with their arms round each other. She was absolutely trusting and confiding to her mother, and showed strong sentiment in regard to her.

The patient's illness began when her mother was killed in an accident in January, 1926. Immediately after this the patient was so upset that a doctor was called in. Looking up at the ceiling she would say, "I'll not be long here. I'll soon be smiling." Her condition was not helped by some well-meaning but misguided friends, who chaffed her about this behaviour. The patient said, "I wonder you take this so lightly." She said she saw God on the roof. This episode passed off after fourteen days, and nothing further was noticed about the patient until June, 1926, when she began to read the Bible to excess. She bought a biblical dictionary, and was a keen follower of explanations of Biblical events. She talked of what Christ had suffered. While at work she went into another department and stated that two of the employees were conspiring against her. She evidently made a scene, and was taken home by her father. For three days she was hallucinated, tried to take off all her clothes, and stood in the crucifixion attitude. She stated that she "had to make a sacrifice." She kept on repeating, "God, God, God, God." She did not take food, and did not sleep. Sometimes she spoke only in whispers. She would stop in the middle of a sentence, and go on to speak of something else. She took off her stockings, saying, "I hate black." She cried for "Jimmy"—the man whom she had "turned down." She squatted down in the drawing-room in mixed company and passed water. She was taken to the hospital at R— in June, 1926, and a report from there shows that her condition was much as described above.

This is a case where a psychosis follows a precipitating situation—the death of the patient's mother. This bald statement in itself does not, of course, explain the psychosis.

When we consider, however, that by her own admission, and from the observations of other relatives, she had a very curious attitude to her mother, the explanation becomes clearer.

A woman of thirty-two habitually sleeps with her mother in a close embrace. She runs to her mother with everything; she "turns

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down " a good man because she prefers her home and her mother. In other words, the patient's mother occupies the same position in her affection as she did when the patient was an infant. This woman has never really learned to " fend for herself," so far as the more intimate side of her life is concerned. The mother is the main support of the patient's emotional life. This support is suddenly taken away, and immediately we see all the childish capacity for make-believe (known to be a trait in the patient's character) coming into play: " I'll not be long here. I'll soon be smiling." She " has to make a sacrifice." Obviously the mainspring behind such expressions is the wish to be with her mother, *i.e.*, dead. Then we get a partial re-adjustment, an attempt to " make the best of a bad job," and we find the patient crying for " Jimmy "—the next person in her affections. Coincidently with this is a wish to forget the mother's death, and she tears off her stockings, saying, " I hate black " (the symbol of death). Then comes a great excitement, and behaviour of a truly childish kind (giggling, wetting the floor, and so on).

In the clinical picture we see obvious pointers to the major ætiological factor when we study the content of thought—hallucinatory voices of the dead mother, and the belief that the mother is with her. Because the original endowment of the patient is good—she comes of good stock, and had made a good external adjustment to life—the patient is able to survive and re-adjust to a crisis which she should have gone through nearly twenty years before, and then over a period of years instead of days, namely, the breaking of the childish emotional bonds between mother and daughter.

One other comment on this case: It illustrates excellently the danger of the empirical method of diagnosis and prognosis. On the face of it, with the hallucinations, foolishness and wetting, the case falls into the dementia præcox group, and as such is implicitly given a hopeless prognosis. This case illustrates the great importance of taking all the factors into consideration, and regarding the case from a dynamic view-point. We must give it a name. Clinically there was a true splitting or dissociation of the psychic functions —a temporary disintegration, in fact. It would, therefore, be valid to call this case one of schizophrenia.

CASE 2.—Illustrating a more complex series of ætiological factors, and showing how a careful study of the clinical picture points the way to their elucidation.

A young girl, a domestic servant, æt. 19, was admitted to the Cardiff City Mental Hospital in December, 1927. She was elated, over-talkative, laughing and keeping up a running commentary of everything that was going on around her. " Clang " associations were prominent, the patient calling out, for instance, " Fire 'ere, diarrhœa," and laughing loudly.

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She stated that she was as happy "as she could be." She was quite uncooperative in ordinary examination.

Physically, there was an exudate from the tonsillar crypts, foul breath, a pultaceous abdomen, and general exaggeration of the tendon reflexes. Otherwise no gross abnormality was made out.

When seen again a few days after admission she stated that she "saw horrible things at night," and that she "heard mummie's voice calling her name." Her memory for remote events was good, but she was quite unable to recall more recent ones, such as her admission to hospital. She was disorientated, and unable to give a satisfactory account of the past few days. She recognized and admitted that she was unusually "keyed up" and emotional, and that she was talking a great deal. Real insight, however, was lacking, for, on seeing me again, she cried out, "Oh, what you did to me last night. You gave me a 'Lucky Dream' cigarette and operated on me. Oh, God, this is awful. The things I see when I shut my eyes."

This state of excitement continued until March, 1928, when it abated somewhat, and it was possible to enter into more satisfactory conversation with the patient. Speaking of herself, she said that she had not been happy at school, because she felt that everyone hated her.

Q. "Did you feel that you were not as good as others?"

A. "Always."

Q. "Why was that?"

A. "I thought I was ugly, to give you a plain fact, and others were jealous because I was deemed better than them. I had long curly hair, and the boys used to pull it. Instead of crying I used to hit them. The men teachers made a favourite of me, and this made the women jealous because they were their sweethearts."

Q. "Why did you think you were ugly?"

A. "I was always called 'ugly duckling' by my cousin."

Patient went on to tell how her father had been head gardener to Lord I—, and had had to give up his position owing to chronic illness. Her mother then tried to run a little shop, but became bankrupt, and the whole family had to move to relatives in Cardiff. They were greeted at the station by patient's aunt and cousin, and the latter, when he saw patient (then about twelve), said:

> "Ugly duckling, ugly duckling, quack, quack, quack,
> Go to the Devil and don't come back."

When she got to this stage of the narrative patient burst out with great emotion, "I hate Cardiff and everything in it." Calming down, she said that she "always found reason for hating Cardiff," but in the "background of her mind" she "vaguely pictured that scene at the railway station every time."

For a long time she had been made to feel that she was a "charity child." Gradually her mother re-established their position, and her father was able to find employment once more. Patient was then sent to a Protestant school, but happened to be living in a district where most of the children were Roman Catholics. The Catholic children used to throw stones at her. She said that this "made her feel that people hated her" and that she was "no good."

When asked how long that feeling lasted, she said, "I've still got it," and then (with great emotion), "Since mummie's gone I feel I could lie down and not get up again." (Her mother had died in July, 1927—see history below).

She said that all her boisterousness and jollity were forced, and were just to make up for all the unhappiness that she really felt. By May, 1928, patient was again as excited as she had been on admission. This excitement continued for six weeks, and in July, 1928, she developed signs of acute appendicitis. She was operated on and a distended, acutely inflamed retro-cæcal appendix was removed, there being abundant evidence of long-standing inflammation in the adjacent parts.

After the operation patient was very acutely excited—more so than before. This abated, and fluctuations in her mental state continued for some months. She was not making satisfactory progress. She continued thus until February, 1929, when, on account of persistent exudate from the tonsillar crypts, her tonsils were removed. For a variety of reasons this had not been done earlier. After this there was a brief final "flare-up" of excitement, lasting only a few days, and the patient made an uninterrupted recovery, leaving hospital in May, 1929.

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The previous history of this case was as follows: The family history was negative for nervous and mental diseases. Patient was apparently a healthy, aggressive child, mixing freely with others, and being in a class ahead of her years at school. She was boisterous and excitable, full of fun, but at times very quiet.

The acute phase of her illness began in December, 1927, a few days prior to admission. She had been nursing her mother for about six months, until the mother died in July, 1927.

After that the patient was frequently seen studying books, and she expressed a desire to be a nurse. Apart from this rather quiet and seclusive behaviour, nothing was noticed until the acute phase began. She became "keyed up" and overtalkative. She said that she had dreamed that she saw her mother, who in the dream, had said she (patient) would win a prize-drawing in a newspaper competition. After this she became expansive, and "wanted all the Church people to come and hear the glad news." She expressed a desire to send presents to all the poor children in the district. She was elated and apparently happy. When arrangements were made to take her to the workhouse observation ward she appeared attired in a dance frock, and announced that she was going to be married that afternoon, and that she had come into a great deal of money, and was going to send her brother to college.

Three major ætiological forces stand out in this case. They are:

(1) an environmental disaster (death of mother);

(2) personal psychological forces (ideas of ugliness and inferiority);

(3) physical ill-health (appendix and tonsils);

and these are being brought to bear on a personality which is excitable and easily upset, and reacts vividly to the situation of the moment—in a word, the syntonic personality.

It is of the greatest importance to note that, as seen at the time of her admission to Hospital, and shortly afterwards, one of the most striking clinical features in this patient was the impairment of the intellectual functions. She was disorientated; her memory for recent events was so impaired that she could not remember being admitted to hospital; she confabulated. As was pointed out in the historical survey, intellectual impairment has been shown to be an almost infallible criterion of actual disease, injury or poisoning of the brain. Following out our plan of clinical approach, what could we find in the physical state of this patient that might be of ætiological importance? Admittedly not a great deal. Her tonsils were infected, her breath was foul; that was about all there was on the surface.

Bearing in mind our warning to the ultra-physiogenic school of thought, had we any right to ascribe causal significance to this apparently mild septic state?

We would formulate our answer to such a question as follows: The mental symptoms pointed unequivocally to there being some important physical factor at work. Routine examination showed that the tonsils were unhealthy; therefore, they must, in this case, be suspect. Had there not been intellectual impairment, then there

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would have been no justification for ascribing major importance to the physical condition.

At first the patient was considered much too excited to risk operating on her. Then, as a surprise, came the acute appendix, demanding urgent operation, which revealed old-standing trouble —further justification of our belief in some important physical forces in this case. But not until the tonsils were removed did the patient recover. Whether "*post hoc*" or "*propter hoc*" we do not know, but in this case there is some justification for believing it to be "*propter hoc.*" Admitting, then, the major importance of physical forces in this case, how does a study of other factors help us to understand it?

Take the girl's own conversation. She always felt "ugly" and "no good." She felt other children at school were against her (apparently with some justification). She longed for joyful companionship, yet she had to be content with being "a charity child." What strange conflicts must such conditions have set up in this girl? After months of strenuous nursing by the patient, her mother dies. The girl has lost one of the few supports she had in what was to her an antagonistic world ("I hate Cardiff and all that's in it"). It hardly demands any abstruse psychological delvings to appreciate why this simple, sensitive, imaginative child should dream, after a period of simple reactive depression, that her mother tells her that she is going to win fortune in some newspaper competition. Would not that go a long way towards solving her difficulties and realizing her ambitions? A simple matter of a conscious wish being fulfilled in a dream. Then the true dynamic view-point must be taken. We must not consider this dream as a static thing complete in itself and detached from the patient's life. We must consider its effect on the patient and her reactions to this experience. Bearing in mind her emotional state, engendered by the death of her mother and her environmental oppression, what is more natural than that she should take this dream as a good omen and talk expansively of what she would do? Add to this some toxic episode, and it seems that our explanation of the psychosis is as nearly complete as we can make it.

For descriptive purposes, we might call this an organic psychosis with affective features.

We are aware that McCurdy (according to his *Psychology of Emotion*) would probably explain this psychosis on a different basis. He would say that the state of elation was the conscious concomitant of a subconscious wish-fulfilment, *viz.*, the death of the mother,

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who, it would be suggested, was obstructing in some way the instinctive strivings of the patient, these being represented in the expansive talk and so forth which characterized the onset of the psychosis. This, however, seems to be an unnecessarily recondite explanation; and, moreover, there is no evidence that the mother was obstructing the patient's instinctive strivings. In this case, at any rate, the superficial explanation is the one which not only fits the facts, but is actually supported by them on every hand.

There is one other lesson to be learned from this case. It concerns the personality of the patient before she broke down. Her father stated that she was bright and cheerful, a good "mixer," and apparently perfectly happy save for transient periods of quietness, to which he did not attach any importance. But we have it from the patient that she was, in fact, far from being happy; that she felt her position keenly; and that an incident which her father laughed off had had a far-reaching effect upon her (the "ugly duckling" incident); so that her outward appearance was a conscious effort to make up for her inner discomfort.

Again, therefore, we would emphasize the importance of the subjective aspect of things. It is not the events in a patient's career that matter; it is what they mean to the patient that is all-important. The attempt to make psychology and psychiatry the study solely of objective behaviour can never lead to an understanding of the conditions with which we seek to deal.

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HUNGER AND APPETITE: A SUGGESTED CORRELATION BETWEEN PHYSIOLOGICAL AND PSYCHOLOGICAL PROCESSES.

By Hilda Weber, B.Sc.(Psychol.), M.B., B.S.Lond.

It is a well-known axiom that to know one subject thoroughly entails more than a passing acquaintance with many others. This is especially true of the field of medicine, where neglect of any one related subject may lead to an incomplete, or even to an erroneous solution of a particular problem.

The question then arises how far this holds true for the different medical sciences, *e. g.*, physiology and psychology. These two examples have been cited because, though the subject-matter of the physiologist is not that of the psychologist, yet in some matters they have to face difficulties much akin in character. For instance, the related subjects of hunger and appetite afford suitable material for the physiologist, at the same time that they have been by no means overlooked by the psychologist.

Considerations of this nature, together with the fact that I have a certain amount of personally-observed clinical material illustrative of the psychological side of the picture, have led to the writing of this paper; for they caused me to consider not only the practicability, but also the possible value of collating my own observations with physiological as well as with psychological data. My purpose in so doing is to determine, as far as possible, to what extent the independent findings in the one field confirm or contradict those in the other.

The Distinction between Hunger and Appetite.

Prof. Carlson, whose extensive researches on the subject have been largely drawn upon in this investigation, has come to the conclusion that there is a real qualitative distinction between hunger and appetite. Thus appetite, he says, is essentially pleasant, and

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never at any time painful, whereas hunger is always unpleasant, and when intense it may even be felt as pain.*

He bases his conclusions not only upon theoretical considerations, but also upon objective results, for he claims to have obtained successive contrast of the two sensations experimentally. Thus he found that the introduction of, *e.g.*, weak acids or wine into the stomach by means of the stomach-tube (in order to avoid stimulation of the nerve-endings of the mouth) gives definite results, both physical and psychological. Objectively, the gastric hunger contractions, previously present, are temporarily inhibited, owing, he supposes, to the stimulation of the gastric mucosa. Subjectively, the unpleasant tense sensations associated with hunger give place to a pleasant tingling in the stomach, and the thoughts tend to revert to the dinner-table—phenomena which he thinks are characteristic of appetite.†

On the other hand, it must be admitted that E. G. Boring, the eminent psychologist, was unable completely to confirm these findings. He failed even to detect appetite by Carlson's method, though it is true that under normal conditions of meals his observers had no difficulty in differentiating hunger from appetite or the "desire for food" as he calls it.‡

Hunger he found to be a complex of kinæsthetic pressure and pain, felt predominatingly in the region of the stomach. In the case of appetite, however, stomachic sensations were not always prominent, nor even always felt. This finding, together with others of a more positive nature, led him to the conclusion that "oral complexes" constitute the most generally recognized basis for appetite, meaning, *e.g.*, sensations arising from increased saliva tion, together with certain pressures and aches, indicating a desire for food, similar to the sensory basis for thirst.§

But apart from such experimental work, to which more detailed reference will be made later, there is much well-known physiological and psychological material which goes far to support the existence of a qualitative distinction between hunger and appetite.

In the first place, whereas hunger is almost if not entirely dependent upon internal stimuli, appetite is also largely concerned with those of external origin. In the second place, the crude, unpleasant

* Carlson, A. J., "A Method of Obtaining Successive Contrasts of the Sensations of Hunger and Appetite," *Amer. Journ. of Physiol.*, xxxiii, 1914, p. xvi.

† *Idem, The Control of Hunger in Health and Disease*, p. 116.

‡ Boring, E. G., and Luce, A., "The Psychological Basis of Appetite,' *Amer. Journ. of Psychol.*, 1917, xxviii, p. 443 *ff.*

§ Boring, E. G., "Processes Referred to the Alimentary and Urinary Tracts," *Psychol. Review*, 1915, xxii, p. 310.

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character of hunger forms a contrast with the pleasant, more delicately discriminating nature of appetite.

Again it is common knowledge that appetite, unless intense at the outset, is increased by the very act of eating—as a well-known proverb reminds us, "l'appétit vient en mangeant." Hunger, on the contrary, is always decreased, if it does not entirely cease with eating.* This suggests that hunger and appetite have to some extent contrasting functions.

Hunger is essentially katabolic, in correspondence with the very end for which it exists—that of urging the organism to active search for food. This aim reached, *i.e.*, the nourishment procured, it is advantageous that the hunger and associated katabolism should give place to the more pleasant sensations of appetite and the related processes of digestion and anabolism. It is a commonplace of medicine that appetite aids digestion; this alone indicates that it is of value that it should increase at meal-times.

The Psychological Aspect of Hunger and Appetite.

There is much therefore to support the truth of an important hypothesis with which I shall be much concerned in this paper, namely that appetite is more nearly related to the conscious, and hunger to the unconscious aspects of the mind.

Hunger, like pain, may be said to be a biological necessity, called into existence in the interests of self-preservation. Essentially connected with primitive instinctive activities, it resembles an emergency call in the way it forces itself upon consciousness, sweeping away all irrelevant considerations. This accounts for its sudden onset, and its relative independence of the type of food required—the nourishment is gulped down, all attention being concentrated upon the satisfaction of this one urgent primitive need.

The study of a case of my own, in this paper referred to as "Z—," illustrates some of these features very clearly.

Z—, at the time that he first came for treatment, was a young man, æt. 27. He had been a "difficult" child. Intelligent and imaginative, but passionate and self-willed, he had reacted badly both to the indulgence of his mother and the severity of his father. Thus his narcissism, his exaggerated estimate of his own capacities, were only equalled by the fear which may be said to have been one of the ruling principles of his life. Take, for instance, the degree of fear with which

* This is due to the simultaneous inhibition of gastric hunger contractions, which Carlson found took place upon the mastication of palatable food, or when liquid food was poured into the stomach.

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he regarded the two main symptoms for which he came for treatment, *i.e.*, masturbation and inability to have some decayed teeth extracted. On the other hand, his inability to give free play to his feelings of hostility and thwarted self-love found indirect expression in other symptoms of various kinds, of which perhaps the most noteworthy were the attacks of compulsive hunger from which he suffered.

His bulimia appears for several reasons to represent the activity of the primitive unconscious processes. This is most obviously demonstrated by the fact that it was especially frequent at periods of emotional stress. In addition, on some occasions, when it was even noticeably unconnected with the bodily needs of the moment, it was nevertheless of such strength as to almost paralyse all other thoughts, feelings and actions. Every other matter was swallowed up in one absorbing thought, that of food, in the manner typical of the "All or none principle" so characteristic of unconscious processes. In this way his bulimia served an obvious negative function by inhibiting temporarily the fulfilment, even the consideration of the opposing conscious desires; and this, of course, apart from the fact that it might in itself have been furthering the wishes of the unconscious through the operation of important symbolical relationships.

Hunger is thus brought to some extent into line with the primitive unconscious. That appetite bears a similar relationship to the conscious is at once suggested by the fact that whereas internal phenomena are all that are necessary for the existence of hunger, in the case of appetite external stimuli, present or remembered, are also required. As Carlson says, given a certain complex from the viscera, and an approximately normal state of central correlations—all that is necessary for the existence of hunger—the central and essential element in appetite is the memory of past experiences (sight, taste, smell, etc.) of palatable foods. Incidentally, as he remarks, these memories may be reinforced by external factors, which is of course to be expected.*

The Physiological and Anatomical Basis of Hunger and Appetite.

The fact that outer stimuli make their appeal by way of the special senses indicates the direct connection of appetite with the cerebral cortex—a matter which, doubtful in the case of hunger, thus becomes a certainty here. But after all, this is but to repeat what has already been implied in another form, since the very

* Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 98.

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discrimination which contrasts appetite with hunger at the same time allies it to the finer and more delicate epicritic sensations characteristic of the sensory cortex.

On the other hand, the typically crude and undiscriminating nature of hunger goes far to justify Carlson's classification of this sensation as protopathic.* It is true that in so doing he does not wish to deny the possibility of cortical connection, but strictly speaking, the term "protopathic" as used by Head does carry with it this implication. For these sensations are thought by Head and Sherren to be anatomical as well as distinct functional entities.† They consider that their nature excludes all possibility of any direct cortical connection, at the same time that it differentiates them from the finer and more delicate epicritic sensations.

Whether or no we agree with Head as to the existence of protopathic nerve-fibres, yet there can be no doubt but that the "essential organ" of the thalamus is the end-station for very similar types of sensation, and it seems possible that hunger may have such a subcortical end-station rather than a cortical, which seems properly to belong to appetite. Thus the thalamus has been found to be the centre of "awareness" for certain sensory aspects.‡ This applies especially to the recognition of the coarser sensation of heat and cold, and, of more interest in connection with hunger, that of painful or uncomfortable stimuli. The latter, it may be noted, are thought to be only slightly, if at all, under cortical control.§

Now the circumstance that hunger may have its sensory end-station in the thalamus, and is also connected with the primitive emotions, is in harmony with the fact that the thalamus is the centre for feeling.‖ So the thalamus, even apart from its possibly intimate connection with the emotions and the cruder aspects of sensation, gives independent support to the hypothesis regarding

* *Idem*, "A Method of obtaining Successive Contrasts of the Sensations of Hunger and Appetite," *Amer. Journ. of Physiol.*, 1914, xxxiii, p. xvi.

† Head, H., and Sherren, J., "The Consequences of Injury to the Peripheral Nerves in Man," *Brain*, 1905, xxviii, p. 291.

‡ Head, H., "Studies in Neurology," *Sensation and the Cerebral Cortex*, p. 664.

§ *Ibid.*, p. 665.

‖ The thalamus indeed derives its importance less from its position as a sensory end-station than from the fact that it constitutes the centre for feeling. Thus, while a destructive lesion may cause any degree of sensory disturbance, the release of the thalamus from the controlling and inhibitory influence of the cerebral cortex, *e.g.*, by the severance of the cortico-thalamic fibres by injury or disease, invariably results in an exaggeration of the feeling-tone accompanying sensation. From this the general principle has been deduced, that the greater the affective reaction to any stimulus, the more certain its connection with the thalamus. Conversely, the more entirely any aspect of sensation depends upon discrimination, the less its thalamic, and the greater its cortical appeal. (*Ibid.*, p. 664.)

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the closer association of hunger and appetite with the unconscious and conscious respectively.

This consideration also reinforces Freud's contention as to the prime importance of the emotions; for just as the coarser sensations form the basis upon which the later evolved epicritic sensations rest, so, from analogy alone, the emotions, rather than the later evolved intellectual processes, would be expected to act as ultimate determinants of conduct. Similarly it seems possible that just as the cortex is associated with the more purely intellectual processes, so the thalamus may be in some sort regarded as an anatomical centre of the emotional life.*

In this way anatomy and physiology alike give independent confirmation to the view that it is by way of the emotions that the more primitive mental processes, included by Freud under the name of the unconscious, find expression. In much the same manner, as physiologist and psychologist agree, reason and intellect indicate the action of those processes—included by Freud under the term of "the conscious"—by means of which the more recently evolved and more highly developed elements of the cerebral cortex give evidence of their presence.

Hunger and Appetite in Connection with Further Psychological Considerations.

These considerations go far to support the view that appetite may be connected with hunger in much the same way that the conscious rests upon the unconscious aspects of the mind.

Indeed in many respects appetite seems to partake of the nature of Freud's "ego." Thus the fact that it owes its origin and many of its distinctive characteristics to the influence of the environment acting upon the special senses offers a point of resemblance; for the ego is described as being "ultimately derived from bodily sensations, chiefly from those springing from the surface of the body."†

Then again, owing to the instinctive basis upon which each rests, in the case neither of the ego nor of appetite can internal stimuli be left entirely out of account. Appetite is of necessity a more limited concept in correspondence with the fact that its instinctual

* It is interesting to recall in this connection that destructive lesions of the thalamus may be accompanied by impairment of the emotional movements of the face, while those of volition remain intact.

† Freud, S., *The Ego and the Id*, p. 31. (Authorized note by the translator.)

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elements are related to hunger. The ego, on the other hand, represents the whole of that part of the personality whose formation is due to the influence of external factors; this is in agreement with the circumstance that its ultimate foundation is the totality of the emotional and instinctive life, termed by Freud the "id."

The function of the ego and of appetite are also similar, depending as they both do upon internal and external stimuli. In a sense they act as intermediaries between inner and outer reality, so enabling the organism to adjust itself to both. This is most markedly the case with the ego; for, owing to its direct connection with the cerebral cortex, it possesses considerable powers of inhibition over the otherwise relatively uncontrolled instinctual activities.

It is true that this does not hold in quite the same way for appetite, but even here, in virtue of its relations with the cerebral cortex, it necessarily becomes associated with certain inhibitory factors inoperative in the case of hunger. Witness its powers of discrimination, which distinguish it from hunger at the same time that they ally it to the ego. Indeed when Freud says "in the ego perception plays the part which in the id devolves upon instinct"* he might have been referring to appetite and hunger respectively.

The Relation of Appetite to Hunger.

In this way psychology, in common with physiology, alike supports the view that there is a qualitative distinction between hunger and appetite. The error of regarding them as merely different intenrities of the same sensation curve has probably arisen, as Carlson suggests, from the fact that appetite is usually present at the same time as hunger.† When hunger is mild, then appetite is the more prominent in consciousness, whereas when hunger is powerful attention becomes focused upon this sensation.

In other words, at periods of strong instinctive need, the delicate discrimination associated with appetite gives place to the relatively uncontrolled urge of hunger. After all, it is in much the same way that the ego, which Freud regards as the representative of reason and sanity, may on occasion be overpowered by the id, which contains the passions.‡

This corresponds with the fact that though reason would be impossible in the absence of the cerebral cortex, yet at bottom the

* *Ibid.*, p. 30.
† Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 99.
‡ Freud, S., *The Ego and the Id*, p. 30.

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most intellectual and logical argument has to some extent an emotional basis. As Bernard Hart has pointed out, the conclusions of the politician are obtained less by the application of sound logical principles than by the mental set given to his way of thinking by his emotionally-toned bias.*

So with appetite, true as it is that the presence of the more recently developed cerebral cortex is essential for its presence—as possibly contrasted with hunger—yet even here the emotional factor cannot be left entirely out of account. Thus the mood of the moment, the society, and the surroundings generally, must be to some extent taken into consideration here, so indicating the ultimate instinctive basis upon which each rests.

" Better is a dinner of herbs where love is, than a stalled ox and hatred therewith."

The subject of hunger and appetite will now be discussed in greater detail. Especial reference will be made to hunger, since on the physiological side the more elementary processes are more particularly dealt with here, while from the psychological point of view the clinical material is concerned with the pathological phenomenon of compulsive hunger.

The Stimulus for the Sensation of Hunger.†

Cannon and Washburn, as a result of their investigations on the subject, state definitely that the cause of the sensation of hunger is the contractions of the empty stomach. They base their conclusion on their experimental finding of the close concomitance of the two;

* Hart, B., *The Psychology of Insanity*, p. 131.

† A clear account of the three methods utilized by Carlson for the determination of the tonus and contractions of the empty stomach, both in man and animals, is to be found in chap. 3 of his work entitled *The Control of Hunger in Health and Disease.*

The following are the three methods employed by him in his experimental work (*ibid.*, p. 30):

(*a*) Direct inspection through a permanent opening in the stomach-wall (gastric fistula).

(*b*) The introduction of a balloon into the stomach either through the œsophagus or through a gastric fistula, and the recording by the distended balloon of the variations in pressure of the gastric contractions.

(*c*) The introduction into the stomach of a balloon covered with bismuth paste on the inside. This makes possible the graphic record of the stomach movements synchronously with X-ray photography, or inspection by aid of the fluoroscope, together with the recording, in man, of subjective sensations.

The principal subject of the experiments was a healthy young man, æt. 31, with complete closure of the œsophagus, and a permanent gastric fistula of twenty years' standing.

Experiments were also made upon Carlson himself and some of his co-workers (*ibid.*, chap. 9), upon infants (*ibid.*, chap. 8), and upon the lower animals (*ibid.*, chap. 9).

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in addition they think that the subject's inability to control these movements in any way excludes all possibility of suggestion.*

Though Carlson does not consider that this evidence is complete in itself, yet he is on the whole in agreement with this view, for his own independent observations show that, when the stomach is normal, strong contractions of the empty stomach are productive of hunger pains.† Besides this he also found, although it is true some difficulty arose from the occurrence of " spontaneous " stomach movements,‡ that in general inhibition of such gastric activity and cessation of the hunger sensation run parallel.§

The stimulus itself, in so far as it is a mechanical one, he thinks is variation in tension rather than actual pressure, in which case hunger contains kinæsthetic sensations as well as pain, the latter predominating in strong hunger.‖

The Origin of the Gastric Hunger Contractions.

With regard to the actual origin of the hunger contractions themselves, Carlson enumerates as the four most probable conditions which may be responsible¶ :

1. A primary mechanism in the stomach-wall.
2. The condition of the gastric mucosa.
3. Motor impulses through the vagi.
4. The condition of the blood.

Of these he considers that the first is the essential factor.** Before arriving at his final decision, however, he first excluded the other three alternatives.

With regard to these he found that stimulation of the gastric mucosa has a negative function, since far from exciting, it actually has an inhibitory effect upon the contractions.††

The vagus nerve, on the other hand, he found has a direct positive action, since strong contractions of the stomach, full or empty, can be induced by stimulation of this nerve.‡‡ Nevertheless, since the

* Cannon, W. B., and Washburn, A. L., " An Explanation of Hunger," *Amer. Journ. of Physiol.*, 1911–12, xxix, p. 451.

† Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 69.

‡ *Idem*, " The Contractions of the Empty Stomach Inhibited Reflexly from the Mouth," *Amer. Journ. of Physiol.*, 1912–13, xxxi, p. 213.

§ *Idem*, *The Control of Hunger in Health and Disease*, p. 64.

‖ *Ibid*, p. 69.

¶ *Ibid.*, p. 169.

** *Ibid.*, pp. 170–183.

†† *Ibid.*, p. 182.

‡‡ Carlson, A. J., " The Influence of Stimulation of the Gastric Mucosa on the Contractions of the Empty Stomach (Hunger Contractions) in Man," *Amer. Journ. of Physiol.*, 1913, xxxii, p. 246.

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movements of digestion can be carried out fairly efficiently after section of both vagus and sympathetic,* he therefore thinks that the vagus acts merely as an accessory to the primary neuro-muscular mechanism in the stomach-wall.

As to the condition of the blood, he considers it most likely that this is normally of secondary importance.†

The Gastric Mucosa and Appetite.

The *rôle* played by the gastric mucosa is of especial interest in view of the additional support which it gives to the possibility of a real qualitative distinction between hunger and appetite; for though, as already mentioned, with regard to hunger the results are negative, yet in the case of appetite they are on the whole positive.

Thus Carlson found that stimulation of the gastric mucosa inhibits both the sensation of hunger‡ and the gastric hunger contractions.§ On the other hand, with the stomach normal, chemical (and possibly mechanical) stimulation of the nerve-endings of the gastric mucosa‖ initiates or augments the sensation of appetite, at the same time that it favours if it does not increase the movements of digestion. In view of the fact that appetite also assists digestion, the possibility suggests itself that stimulation of the stomach mucosa may be the gastric component of this sensation, in much the same way that the gastric hunger contractions are that of hunger. How far this is the case is by no means at present decided—there is even doubt as to whether gastric sensation plays an essential part at all in the production of appetite.

Pavlov thinks there is a definite connection. Thus he attributes some of the satisfaction caused by eating to stimulation of the stomach as well as to that of the buccal cavity. As he points out, cases of anorexia have been known, which were apparently due to gastric anæsthesia. To quote his words, "Such patients . . . dislike the idea of eating, because the food, as they express it, appears to fall, as it were, into an empty sack."¶ He also cites a personal experience of anorexia following an illness, when recovery of appetite followed the swallowing of a mouthful of wine. He

* *Idem, The Control of Hunger in Health and Disease*, p. 159.

† See pp. 735, 736.

‡ Carlson, A. J., and Braafladt, L. H., "The Sensibility of the Gastric Mucosa," *Amer. Journ. of Physiol.*, 1914, xxxvi, p. 164.

§ Carlson, A. J., "The Control of Hunger in Health and Disease, p. 182.

‖ Carlson, A. J., and Braafladt, L. H., "The Sensibility of the Gastric Mucosa," *Amer. Journ. of Physiol.*, 1914, xxxvi, p. 169.

¶ Pavlov, I. P., *The Work of the Digestive Glands*, p. 109.

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observes that at the very moment that he felt the liquid pass along the œsophagus into the stomach, he perceived the onset of a keen appetite. He thinks, however, that under normal conditions the gastric sensations are so weak that they are as a rule disregarded in the ordinary course of digestion.*

Carlson appears to be of much the same opinion, for he says that when foods or liquids are swallowed in the usual way the nerve-endings in the mouth are the chief sensory factors in appetite, and that these have to be excluded for the gastric component to be clearly distinguished.†

The personal element obviously enters in here, and with it those individual differences, both objective and subjective, which complicate psychological to an even greater extent than physiological experimental work. It may be that here we have the explanation of the different conclusion reached by Boring as a result of his experiments on appetite.‡ Unlike Carlson he does not think that the stomachic complex is an essential component of this sensation. Thus not only did two of his observers never base appetite upon this foundation, but in some instances such gastric sensations were not observed at all.

In spite of this, however, he considers that in so far as appetite has a stomachic sensory pattern, it is akin to, though not identical with, that of hunger. On the whole, therefore, the views of the experimental psychologist have much in common with those held by the experimental physiologist.

Rôle of Extended Vagus and Sympathetic.

Carlson thinks that the gastric functions of the extended vagus, taken in conjunction with that of its antagonist the sympathetic, are largely if not entirely concerned with the regulation and control of the automatic neuro-muscular apparatus in the stomach-wall.§

Beneficial, however, as are the results associated with well-balanced co-operation between these two opposing forces, they are paralleled by the malfunction to which disturbance of this equilibrium may give rise. Indeed there is much to justify Eppinger

* *Ibid.*, p. 108.

† Carlson, A. J., and Braafladt, L. H., "The Sensibility of the Gastric Mucosa," *Amer. Journ. of Physiol.*, 1914, xxxvi, p. 165.

‡ Boring, E. G., and Luce, A., "The Psychological Basis of Appetite," *Amer. Journ. of Psychol.*, 1917, xxviii, p. 453.

§ Carlson, A. J., "A Study of the Mechanisms of the Hunger Contractions of the Empty Stomach by Experiments on Dogs," *Amer. Journ. of Physiol.*, 1913 xxxii, p. 388.

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and Hess in their attempt to divide neurotics into two main classes, the sympatheticotonic and the vagotonic, according to the tendency to overaction of the sympathetic and extended vagus respectively.*

Of such disturbances by no means the least is the dissociation of emotion from the normally resulting activity; thus the substitution of enforced passivity for the activity which should follow sympathetic action may do positive as well as negative harm.

On the negative side it requires no great amount of mental acumen to perceive that it is such inhibition of sympathetic expression which differentiates the comparatively cold and reserved vagotonic from the more emotional and excitable sympatheticotonic. Such indeed is the picture presented by Z—, with his desire to suppress all feeling, since, as he says, "to show emotion is so undignified."

But not only the negative, the positive aspect of such vagal activity is to be found in Z—'s case. This manifested itself especially in his bulimia, to which we have already referred. The fact that this result of vagal stimulation was most frequent at times of mental conflict in itself suggests the possibility that such attacks of compulsive hunger may have represented one of the means by which, through the medium of the extended vagus, the repressed forces found some outlet for their needs. That they expressed themselves in such an unsatisfactory manner corresponds to the well-known fact that neurotic gratification is often felt as pain—though the repressed are able to escape to some extent from the bonds in which they are held, they have to pay dearly for their partial release.

The probable validity of this hypothesis is further supported by a patient A—, who contrasts with Z— in being a sympatheticotonic. If she is obliged to disguise her feelings—especially those of a negative type—*e. g.*, those of hatred and hostility—she tends to be attacked by bulimia. This is well illustrated by the overwhelming and insatiable hunger she experienced during the air-raids which occurred in the Great War. At the moment she not only felt no conscious fear, but was also filled with scorn—which significantly enough she did not openly express—for a relative who behaved in a wildly hysterical manner.

Condition of the Blood.

Another possible cause of the hunger contractions—the condition of the blood—Carlson discounts on the ground that on the whole

* Eppinger, H., and Hess, L., *Vagotonia.*

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the composition of this fluid is more constant than that of the tissues.*

He acknowledges that experimental hyperglycæmia inhibits the normal gastric hunger contractions, and that insulin hypoglycæmia (in normal dogs) tends to be associated with gastric tetany. These phenomena, however, he ascribes to the state of the tissues rather than to that of the blood; thus he suggests that under ordinary conditions the gastric tonus and contractions of the stomach increase parallel with the reduction of the tissue glycogen, and an enforced energy metabolism of lipoids by the motor tissues of the stomach.†

He considers, in short, that it is only under abnormal circumstances that the blood has a directly stimulating effect upon the hunger contractions. Take for instance the increase which is induced by the intravenous injection of blood from a starved into a normal animal, together with the similar action of diabetic blood.‡ These findings he attributes to some substance in the blood, both of the starved and the diabetic animal, which is either normally absent, or is present in only relatively small amount. As he points out, the transfusion of blood from normal dogs, or from dogs whose digestion was at its height, has either no effect, or else has but a slight and transient one, upon the motor condition of the empty stomach.§ In further corroboration of his position are the findings that glucose and insulin have initial effects of an opposite character on the gastric hunger contractions of the normal and diabetic dog.‖

But apart from these observations the relative constancy of the composition of the blood in itself renders it unlikely that there occurs in it a periodic fluctuation parallel with the periodicity of the gastric hunger contractions.¶

Possibly, however, of greater significance is the fact that in young vigorous animals hunger contractions begin as soon as the stomach is empty, while digestion and absorption in the intestine are still in progress.**

* Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 169.

† Bulatao, E. J., and Carlson, A. J., "Influence of Experimental Changes in Blood-Sugar Level on Gastric Hunger Contractions," *Amer. Journ. of Physiol.*, 1924, lxix, pp. 114–15.

‡ Luckhardt, A. B., and Hamburger, W. H., "A Note on the Movements of the Empty Stomach in Certain Pathological States," *Journ. Amer. Med. Assoc.*, 1916, lxvi, p. 1833.

§ Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 221.

‖ Bulatao, E., and Carlson, A. J., "Influence of Experimental Changes in Blood-Sugar Level on Gastric Hunger Contractions," *Amer. Journ. of Physiol.*, 1924, lxix, p. 111.

¶ Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 170.

** *Idem, ibid*, p. 169.

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This latter observation is of especial interest in connection with Z—, in that his attacks of hunger seemed to show an approximation to an infantile form of reaction. Thus they tended to occur about two hours after a meal, even if this had been of such an ample character that, as he himself said, he cannot have been really hungry. In other words it seems possible that this premature hunger may have been a translation into physiological terms of an attempt on the part of the more primitive mental processes to return to the days of childhood, when they were allowed fuller play, less trammelled by the inhibitory forces of conscious control.*

Effects of Sleep.

It is interesting that Luckhardt, though it is true in a rather different connection, has come to a somewhat similar conclusion. For he attributes his experimental finding—that the hunger contractions are either unaffected or are increased during sleep—to the relative freedom of the gastric motor mechanism from such inhibitory restraint as is exercised during waking life by the exteroceptor field (ears, eyes and so on).†

But this conclusion, to which this author has been led by the results of his experimental work, does not seem to Carlson to afford an adequate explanation for what, from physiological investigation alone, certainly does appear to be an anomaly. Thus, as he points out, except for this one case, sleep is associated with decreased activity of the cerebro-spinal system.‡

Closer examination, however, of the question in connection with the psychological aspects of the subject presents a possibly more satisfactory solution to the problem.

In the first place, on the purely psychical plane, the whole of the nervous system is not involved in increased passivity during sleep, since it is at this time that the activities of the unconscious are increased at the expense of the conscious. In the second place, the presence of the gastric hunger contractions is compatible with

* This inference is further reinforced by the above-noted tendency to regularity in the occurrence of Z—'s hunger states. For such regularity is consistent with the lower, more instinctive reactions to which habit is more nearly allied, rather than with that capacity for adaptation characteristic of more intelligent action. This is corroborated by Cannon and Washburn, who regard the appearance of hunger at meal-times as one of the habits of the alimentary canal, of which the regular occurrence of defæcation is another noteworthy example. ("An Explanation of Hunger," *Amer. Journ. of Physiol.*, 1912, xxix, p. 452.)

† Luckhardt, A. B., "The Effect of Dreaming on the Gastric Hunger Contractions," *Amer. Journ. of Physiol.*, 1915–16, xxxix, p. 334.

‡ Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 151.

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vagal stimulation as well as with sympathetic depression—that usual if not constant concomitant of elimination of gastric impulses arising from mental activity.

These two facts together suggest that we may have here a more general application of a hypothesis previously brought forward with regard to Z—'s attacks of compulsive hunger. It was then suggested that his bulimia might be the subjective experience of gastric contractions due to the stimulating action of his repressed unconscious upon the extended vagus. If this is the case, it may also be that the apparently inconsequent stomach movements during sleep may similarly be psychologically determined. In other words it is conceivable that they may be the objective expression at such periods of those activities of the repressed unconscious which find outlet by way of the extended vagus. Should future research verify this theory, psychology will thus have supplied the key to a riddle which physiology unaided could not solve.*

Hunger causing Insomnia.

This possibility finds unexpected confirmation from a further conclusion arrived at by Carlson as a result of some experiments on sleeping dogs.† Since it was found that the animals were awakened when the contractions were too vigorous—and he thinks that the same probably applies to man—he considers that the ability to sleep depends upon the relation between the intensity of the hunger contractions and the depth of sleep.

This connection of hunger with insomnia—given that the previous association between certain repressed and vagal activities is correct—may well be an illustration of the way in which neurotic gratification causes pain rather than pleasure.

Incidentally it is in agreement with the psycho-analytic theory brought forward by Eisler, that the more active an individual has been in the oral phase, and the more this has been later repressed, the greater the liability to sleep disturbances if the libido afterwards regresses to this earlier stage of development.‡

* Otherwise, as Carlson says, this absence of gastric depression during sleep seems to indicate that the vago-gastric mechanism holds a unique position in the organism, a degree of independence of afferent impulses (exteroceptors) and central processes not known in the case of any other neuromuscular apparatus.

† Carlson, A. J., "A Study of the Mechanisms of the Hunger Contractions of the Empty Stomach by Experiments on Dogs," *Amer. Journ. of Physiol.*, 1913, xxxii, p. 381.

‡ Eisler, M. J., "Pleasure in Sleep, and Disturbed Capacity for Sleep," *Internat. Journ. of Psycho-Analysis*, 1922, iii, p. 39.

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It is but natural that the repressed oral libido—or for that matter any other repressed force—unable to express itself in the normal and satisfactory way, when freed to some extent by sleepiness from the ordinary control of waking consciousness, should seek outlet by any other easily available channel. But in so far as this is connected with vagal activity and a consequent increase of hunger contractions, a paradoxical result may occur; for the means of escape thus obtained by the unconscious may disturb, even prevent, the very sleep which has allowed it this freer play. What wonder, then, that where expression of the inhibited forces leads to such discomfort, repression comes to be looked upon as the best method for meeting their demands.

It seems probable that we may have here a reason which in part accounts for the mental attitude betrayed by the advice to "forget your troubles in work," and so on. At the same time it may also explain how it happens that work, which in the well-adapted individual affords an outlet for instinctual tendencies, in these cases is looked upon, and to some extent with justice, as an opponent of the primitive desires and needs.

Effects of Dreaming.

Since the gastric hunger contractions, when too strong, are disturbers of sleep, their inhibition when there is much dreaming,* suggests that the dream is the guardian of sleep. In this way physiological experiment supports a view deduced by Freud from material of a purely psychological nature.†

Of course it may be argued in opposition to this that the inhibition is due to some cause other than a mental one: but this seems improbable for physiological as well as psychological reasons. Thus the physiologist Luckhardt—to whose experimental work on dogs we owe our knowledge of the effect of dreaming on the gastric hunger contractions—considers that the inhibition is cerebral, or, as he puts it, "purely central in origin.‡

* Luckhardt, A. B., "The Effect of Dreaming on the Gastric Hunger Contractions," *Amer. Journ. of Physiol.*, 1915–16, xxxix, p. 334.

† Freud, S., *The Interpretation of Dreams*, p. 197.

‡ He comes to this conclusion after fully weighing the pros and cons of the whole matter. Thus he points out that there is no known sensory nerve which is able to convey such an inhibitory impulse into the central nervous system. To a like effect is his statement that the same cerebral states which effect the movements of the limb and facial muscles are also responsible for inhibition of the hunger contractions.

For various reasons he rejects other possibilities. Thus he dismisses a gastric origin on the grounds that the sensation of hunger, even when painful, does not inhibit the movements of the empty stomach. He thinks that a nervous rather

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It is of further interest in this connection that Weygandt ascertained, in the course of his investigation of the mental effects of hunger, that during periods of starvation the tendency to dream is increased.*

On the other hand it is certainly true that the dream, in spite of its ability to inhibit these disturbing movements, may not achieve its purpose of preserving sleep. This may be ascribed generally speaking to one of two causes.

The first is an example of a partial failure on the part of those mechanisms, included under the heading of the "dream-work," to disguise from consciousness those repressed desires which in the dream are striving for expression. The conscious disturbed, even shocked by these revelations, is roused to the full consciousness of waking life.

This argument necessitates, it is true, acceptance of the psycho-analytic opinion that the dream expresses the workings of the unconscious tempered to a greater or less extent by the necessity for disguising from consciousness the full import of its wishes. But the probability that this construction is correct is reinforced by the fact that it accounts equally well for the other possible cause of such sleep disturbance—the over-alertness of the conscious. For the activity of unconscious wishes may lead to such a heightening of these inhibitory censoring factors, more active in waking life, but still present even in dreams, that a degree of cerebral activity is aroused incompatible with the condition of sleep.

This is illustrated by consideration of Z—'s case. Thus when he is making determined efforts to resist masturbation he is liable to commit the act in his sleep, or, presumably when the conscious is more on the alert, he may awake just as he is about to do so. This circumstance has a further interest in connection with the subject-matter of this paper, since the onset of the habit of masturbation

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than a chemical origin is indicated by the abruptness with which the contractions cease. For this reason an increased output of adrenalin is not implicated—of interest, since Cannon and de la Paz have shown that it is this secretion which inhibits the movements of digestion when the emotions of fear, rage and pain are aroused. (*Amer. Journ. of Physiol.*, 1911, xxviii, p. 64.)

Other possibilities he discounts by evidence chiefly of a negative nature. For example, he discards in this way the action of the splanchnic nerves on the stomach musculature, and that of afferent impulses from the sensory nerve-endings in the muscles, skin and joints, which in turn have been excited by active movements dependent upon impulses of cerebral origin. (*Amer. Journ. of Physiol.*, 1915–16, xxxix, pp. 330–334.)

* Weygandt, W., "Ueber die psychische Wirkungen des Hungers," *Münch. med. Wochenschr.*, 1898, xlv, p. 388.

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coincided with that of his bulimia. The probable significance of this association is emphasized by the fact that not only is his compulsive hunger more frequent at times of mental stress, but it is also one of the pre- and post-masturbation symptoms of which he complains.

Vaso-Motor Changes.

Moreover the hunger which occurs on these occasions seems to indicate indirectly the degree of mental conflict that is raging round the " habit " as he calls it, since it is especially apt to lead at these times to an almost incapacitating weakness and faintness.

Carlson points out that these concomitants of hunger states are not improbably associated with synchronous vaso-motor changes. Thus plethysmographic records of the arm show that in most cases the volume of the limb increases to an amount parallel with strong contraction of the stomach, and diminishes correspondingly during a pause.*

The character of these alterations has led him to think that there may be a close connection between the vaso-motor centre and the bulbar tonus centre of the stomach.† It is of interest that this suggestion, deduced from physiological observations, finds independent support from the consideration of Z—'s case. Thus certain definite vaso-motor signs of a transitory description, as well as disabling attacks of hunger, were some of the post-masturbation symptoms of which he complained; his hands were then apt to become unpleasantly swollen and hot, and he suffered from an irregular flushing of the face, often uni-lateral in distribution.‡

The degree of variability shown by these vaso-motor changes, however, renders it doubtful, as Carlson says, whether they constitute a necessary part of the hunger complex.§ But since they do occur in some cases it would be satisfactory if they could be accounted for. It is true that their variation, both in different persons and in the same person at different times, is in part

* Carlson, A. J., " The Influence of the Contractions of the Empty Stomach in Man on the Vaso-Motor Centres, on the Rate of the Heart-Beat, on the Reflex Excitability of the Spinal Cord," *Amer. Journ. of Physiol.*, 1913, xxxi, p. 321.

† Carlson, A. J., " The Character of the Movements of the Empty Stomach in Man," *Amer. Journ. of Physiol.*, 1912, xxxi, p. 152.

‡ It would be of interest to know whether the increase in volume of the limbs is equal, or whether there is a difference to be detected by the use of the plethysmograph.

§ Carlson, A. J., " The Influence of the Contractions of the Empty Stomach in Man on the Vaso-motor Centre, on the Rate of the Heart-Beat, on the Reflex Excitability of the Spinal Cord," *Amer. Journ. of Physiol.*, 1912, xxxi, p. 324.

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explained by the fact that the vaso-motor centres are acted upon by practically all afferent impulses. But though physiology enables us in this way to account to some extent for the how of this variability, it brings us little nearer to the comprehension of its why.

It is here that appeal to psychology seems to meet with better reward, for material provided by Z—'s case appears to throw some light upon the subject. Thus the association of his pathological attacks of hunger with vaso-motor changes suggests that just as the one, that is, his bulimia, so the other may be the expression in vasomotor terms, so to speak, of the activities of his repressed unconscious.

The probability of this suggestion is increased by the consideration that the weakness and faintness which he might experience on these occasions, altogether out of proportion as they might be to his physical needs, even at the most rationalizing level possible, yet did seem to correspond closely to the strength of the unconscious trends which were in opposition to the course which he might be consciously pursuing at the time.

This was especially noticeable on one occasion when the moment seemed particularly favourable for pressing his suit with a girl of whom he had become fond. He suddenly not only became aware of a hunger so intense that the whole of his conscious attention became fixed upon this sensation, but he also felt so weak and faint that he was unable to conceal his feelings in any way. And this at a time when an attitude of dull, limp will-lessness was all against his conscious interests. But it was very much in line with his, at times, openly expressed reluctance to curtail his freedom by marriage. He resented having to consider the girl. "Why should *I* have to beg and implore? It is not right that I should have to feel the misery of suspense." He would stamp out his feelings of love, and become purely intellectual without any emotion, were not the price for this "cold-bloodedness," as he termed it, too heavy; for his ideal of life, governed entirely by "logic," entailed a loss of all values, so that life became entirely worthless. Yet his narcissism, his infantile desire for omnipotence, was not compatible with disappointment, with those wounds to his self-love to which rebuffs of his advances rendered him liable—repulses which would be felt all the more keenly the greater his affection for the person responsible for such cuts to his feelings. The driving force, as well as the presence of such wishes, was demonstrated by the onset of these temporarily disabling symptoms.

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Reflex Excitability of the Cord.

These, however, were by no means the only concomitants of Z—'s attacks of hunger. At such times he was not infrequently the victim of that irritability, restlessness and inability to concentrate so often observed in strong or even moderate hunger states.*

The probability that these symptoms are more nearly allied to the unconscious than to the conscious, may be gathered on general grounds from Carlson's finding that the reflex excitability of the cord—which he tested by means of the knee-jerk—increases simultaneously with strong contractions of the empty stomach.† For such heightened reflex excitability, being an indication of a certain freedom of the spinal centres from cortical control, is compatible with a similar release of the unconscious from the inhibiting influence of the conscious. The probable accuracy of this deduction is demonstrated by the observation that these symptoms of restlessness and so on occur in decerebrate pigeons. Thus a decerebrate pigeon, which Carlson kept for about a year, moved about restlessly when its crop was empty, but rested as soon as it was fed—the length of time that it remained quiet depending upon the amount that it had eaten.‡

Rogers, also, as a result of a similar set of experiments performed upon normal and decerebrate pigeons§ has noted the same phenomena. But of equal interest is his observation, to which Carlson refers,‖ that removal of the thalamus results in the loss of the behaviour characteristic of hunger in decerebrated pigeons. This finding is important as evidence of the dependence of the hunger sensation upon a subcortical rather than a cortical centre, at the same time that it confirms the suggestion made in an earlier part of the paper that the thalamus may be an end-station for this sensation.

Effects of Exercise.

But whereas restlessness is associated with an increase of hunger contractions, standing or walking *in situ* has no effect at all, except that perhaps walking prolongs a hunger period. But running *in*

* *Idem, ibid.*, p. 327.

† *Idem, ibid.*, p. 324.

‡ *Idem*, "The Relation between the Contractions of the Empty Stomach and the Sensation of Hunger," *Amer. Journ. of Physiol.*, 1912 xxxi, p. 178.

§ Rogers, F. T., "The Hunger Mechanism in Birds," *Proc. of the Soc. for Exper. Biol. and Med.*, 1915–16, xiii, pp. 119–21.

‖ Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 215.

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sitû has an opposite effect from restlessness, since it promptly inhibits the contractions, the degree and duration of the inhibition being on the whole proportional to the speed of the running.*

Now such specific exercise not only contrasts with aimless wandering in its connection with the hunger movements, but also in its direct relations to the more consciously ordered activities as contrasted with those of the unconscious. In other words, just as we have found that heightened activity of the repressed unconscious tends to be associated with—may even at times cause—an increase in the gastric hunger movements, so correspondingly we seem to see here that decreased activity of the inhibited unconscious may give rise to, or at any rate is accompanied by, a diminution of these hunger contractions.

These observations are of interest, since they offer an explanation of the use of hard physical exercise as a means of diversion from mental conflict and difficulty. Z— regards exercise as a definite means of defence: in the winter evenings he longs for the summer because of the greater opportunities it affords for those outdoor activities which help him to forget his troubles.

On the other hand, it is a matter of everyday observation that at best exercise provides no more than a temporary relief from conflict, and in some cases does not bring any alleviation whatsoever. This, again, is to some extent met by Carlson's finding that the after-effects of exercise are on the whole of a stimulating nature, the gastric hunger contractions usually being more intense on the days of specific exercise than on the controls. There was, however, no constancy in the results. But this, far from causing Carlson surprise, is, he says, one which is only to be expected, in view of the partial dependence of the gastric motor mechanism upon a factor neither controlled nor understood.†

It seems impossible, however, to leave the matter at this point; rather does it raise the question as to the nature of this factor. In what follows we shall attempt to make some progress towards the solution of the problem.

The Metabolic Factor.

From the physiological point of view alone there is much to be considered. In the first place exercise not only causes a decrease in the gastric hunger contractions, but also an increase in metabolic

* *Idem, ibid.*, p. 210.
† *Idem, ibid.*, p. 211.

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rate. On the other hand, increased metabolism in itself is associated with an increase, not a decrease, in the gastric hunger contractions.*

Thus while the direct effect of exercise is a decrease in these movements, its indirect result (through the influence of heightened metabolism) is an increase of these contractions. Under certain circumstances it may therefore follow that the indirect effect may predominate over the direct, as the increased need for food after exercise clearly demonstrates.

This probability—*i.e.*, that a heightened metabolism may now and then counterbalance or even annul the direct effects of exercise—is rendered all the more likely by the fact that its elevation is maintained for some time after the causative exertion has ceased. This of course applies equally to the psychological as to the physiological effects of exercise, for that exertion has a psychic influence is certain if it is able to influence the unconscious in the ways indicated above.

But this is not all. The known interaction between mind and body makes it reasonable to suppose that under certain circumstances the state of the gastric hunger contractions may promote a corresponding psychic reaction, *i.e.* their increase on the whole tends towards a relative freedom, and their decrease towards a like inhibition of the repressed unconscious.

Consideration of Pavlov's work on conditioned reflexes goes far to reinforce this proposition. It is true that, for obvious reasons, he uses an external stimulus as the signal for the formation and later production of a given conditioned reflex.† But, by analogy, it seems possible that in the course of life internal stimuli may come to hold a like position.

This consideration brings with it the possibility that in a case of bulimia we are dealing less with a normal manifestation of instinctual activity and with hunger aroused by real physical need, than with a relatively abnormal expression of unconscious processes and the resultant psychologically conditioned gastric hunger contractions.

That the alteration in the metabolic rate tends to be associated with, if it is not at times a factor in the evolution of, a definite type of reaction, both psychological and physiological, seems to be illustrated by the picture presented by melancholia. Here the characteristically low metabolic rate is accompanied not only by inhibition both in thought and feeling, but also by a distaste for food, in itself suggestive of a decrease in the hunger movements.

* Patterson, T. L., "The Cause of the Variations in the Gastric Hunger Contractions with Age," *Amer. Journ. of Physiol.*, 1915, xxvii, p. 322.

† Pavlov, I. P., *Conditioned Reflexes*, p. 26.

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It is true that the contrasting picture of mania, though it certainly exemplifies the association of a raised metabolic rate with lack of repression, does not give such a consistent gastric picture. Nevertheless the possibility of an associated increase in the hunger contractions is not entirely negatived. Thus appetite, or perhaps more correctly hunger, is voracious in some cases. It must be confessed, however, that more often the desire for food is uncertain, spasmodic, and may be for long periods completely non-existent. On the other hand, it must be remembered that the deranged condition of the association areas, as illustrated by the "flight of ideas" characteristic of this type of patient, renders any degree of attention a matter of difficulty. This brings with it the likelihood that anorexia in these patients may be due less to an absence of gastric hunger contractions than to the deranged condition of the central connections.

But apart from such conditions in which the metabolic rate is but one feature of the whole, there is much to show that metabolism, when taken in connection with no matter what other related factor —of which perhaps the most important is age—still exerts a specific influence upon the body-complex as a whole, and upon the gastric mechanism in particular. Indeed Patterson, as a result of his researches on the cause of the variations in the gastric hunger movements which may occur with age, has come to the conclusion that metabolism is of even greater importance than age in the determination of the activity of the gastric motor mechanism.*

Influence of Age.

This opinion carries all the more weight in that he by no means minimizes the importance of age—in fact it is to his experimental work that we owe the knowledge that the gastric hunger contractions, which in young dogs are practically continuous, decrease as life advances.† It is true that he attributes this retarded activity to a slower rate of metabolism, yet surely this fact is of little real value if the metabolic factor is, as he says, to a large extent brought about and controlled by the age factor.‡

However this may be, it is probably not without psychological significance that the gastric hunger contractions are less active in

* Patterson, T. L., "The Cause of the Variations in the Gastric Hunger Contractions with Age," *Amer. Journ. of Physiol.*, 1915, xxxvii, p. 328.
† *Idem, ibid.*, p. 316.
‡ *Idem, ibid.*, p. 322.

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the old than in the young,* since it agrees with the fact that the forces of repression, less powerful in childhood, tend to increase with age. This introduces the possibility that the factor of repression may be added to those of exercise, metabolism and age in connection with gastric motility.

Now repression, owing to its position as an essential constituent of the neuroses,† has a close connection with conflicting tendencies. It is known that these in turn may affect conduct in a superficially incalculable manner. It seems possible, therefore, that among the activities of the repressed unconscious may be found that factor in the causation of the gastric hunger movements described by Carlson as being one which is neither controlled nor understood.

The Relation of Hunger to the Emotions and the Instincts.

It is of interest that physiological research should have led Cannon to hold a somewhat similar view of the subject, for he gives it as his opinion that some psychic action is responsible for those cases in which emotion and excitement do not increase a man's efficiency.‡ On the other hand, it must be borne in mind that the paralysing effect of one emotion may be more than annulled by the energizing influence of one that is stronger—the most timid animals become bold when driven by the pangs of hunger, the growing demands for food only ceasing with the onset of incapacitating weakness.§

Hunger, indeed, seems to show its relation to the emotional and instinctual life at every turn, so that much that Freud says of the sexual instinct applies equally well to hunger. For example, his statement in connection with sex that "extreme measures are more likely to be successful in repressing the instinct than are moderate ones"‖ is certainly corroborated by the effects of total and partial starvation upon the sensation of hunger.

Thus though complete absence of food causes real and increasing pain for the first three or four days, yet, after this, provided that liquid of some sort is allowed, as a rule comparatively little discomfort is felt.¶ If, however, privation is not complete, a very

* Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 119.
† Freud, S., *Introductory Lectures on Psycho-Analysis*, p. 289.
‡ Cannon, W. B., *Bodily Changes in Pain, Hunger, Fear and Rage*, note, p. 198.
§ Carlson, A. J., "The Hunger Contractions of the Empty Stomach during Prolonged Starvation (Man, Dog)," *Amer. Journ. of Physiol.*, 1914, xxxiii, p. 118.
‖ Freud, S., "'Civilized' Sexual Morality and Modern Nervousness," *Collected Papers*, ii, p. 92.
¶ Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 138.

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insufficient amount of food being given at intervals, then the painful feelings of hunger are apt to be very intense. The desperate straits to which an individual may be reduced, and the deterioration, emotional, moral, intellectual and physical, which may result from such a chronic state of hunger, are graphically described in Knut Hansun's *Hunger*.

The Sensation of Hunger during Partial Abstinence.

It is an age-old tradition which brings hunger and sex into apposition with one another as mutually adjuvant and complementary factors in life. It is of interest therefore that some modern authorities should consider that the reasons for the different effects of total and partial abstinence are somewhat similar in the two cases.

Thus anxiety neurosis is thought by Freud to be dependent upon frustrated excitation, as when a powerful stimulation is followed by an insufficient discharge.* Similarly with the pain of long-continued starvation, the initial pleasure aroused by the reception of food renders all the more acute the subsequent disappointment when an inadequate amount is obtained; at the best it merely damps, but more frequently it increases the appetite for food, and in every case leads to no real satisfaction.

It is possible that the food, in spite of its inadequacy, may have an energizing effect, sufficient to arouse the hope for, and therefore the efforts to obtain, more nourishment.

The Sensation of Hunger during Total Abstinence.

In the absence of such stimulation we appear to have a condition in which the urge is more or less abandoned or paralysed. That this is a factor in the decrease in disquieting symptoms after the first few days of total abstinence from food is suggested by the similar findings in the sexual life.† Indeed, as Ernest Jones points out, the decrease in hunger in the complete absence of food illustrates the psycho-analytic doctrine of aphanasis.‡

It is interesting that the physiologist, Cannon, when dealing with

* Freud, S., *Introductory Lectures on Psycho-Analysis*, p. 336.

† Since, however, the need for food is more immediately necessary for the maintenance of life, the time factor is, of course, usually different in the two cases.

‡ Jones, Ernest, "Fear, Hate and Guilt," *The Internat. Journ. of Psycho-Analysis*, 1929 x, part 4, p. 393.

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the emotions in general, should hold a somewhat similar opinion. He thinks that those cases in which pain and the major emotions have a depressing, not a stimulating effect, are related to the recognition of the impossibility of obtaining satisfaction.*

His use of the word "recognition" at first sight suggests the influence of the ego, with its ability to learn by experience, as contrasted with the instinctual id. But the association of this realization with emotional paralysis implies in addition the presence of considerable, even severe, repression of important instinctual components.

Further justification for this supposition is afforded by the consideration that the deleterious results of pathological anorexia are due less to the accompanying decrease in muscular energy, serious as this may be, than to the loss of that "drive" to action which constitutes the very reason and purpose for the existence of hunger in its relation to life. Carlson, indeed, is of opinion that only pathological complications can account for that total loss of appetite and hunger which occurs in some cases of complete starvation.† Thus he found that though the discomfort due to starvation diminished after the first few days, yet it was never wholly absent.‡

The Gastric Hunger Contractions during Total Abstinence.

But even so we are faced by the problem of why the sensation of hunger should decrease after the first few days of total abstinence, a phenomenon rendered all the more remarkable by the fact that its physiological stimulus, the gastric hunger contractions, far from being decreased, either tend to remain constant, or may even show an increase. Thus Carlson found that the empty stomach of men and dogs during starvation periods of from five to fifteen days usually exhibited normal or greater than normal hunger contractions.§ Still more surprising, Dr. Luckhardt found that the gastric hunger movements and the gastric tonus of two diabetic dogs persisted, and even increased to within a few hours of death, when the animals were too feeble to stand without support or even to masticate food without taking an occasional rest.‖¶

* Cannon, W. B., *Bodily Changes in Pain, Hunger, Fear and Rage*, note on p. 198.
† Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 148.
‡ *Idem, ibid.*, p. 138.
§ *Idem, ibid.*, p. 141.
‖ Luckhardt, A. B., "The Cause of the Polyphagia in Pancreatic Diabetes," *Amer. Journ. of Physiol.*, 1914, xxxiii, p. 322.
¶ These latter cases, however, are complicated by the definitely pathologic condition of the blood (see p. 736).

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These findings indicate that there is an actual decrease in the sensitivity to the sensation of hunger after the first few days of total abstinence. Carlson suggests that this is due to the depression of the central nervous system resulting from lack of food.* In the event of this being in fact the case, which seems to be not unlikely, further possibilities at once present themselves.

In the first place the depression arising from privation is not limited to one system in particular, but rather tends to involve the body complex in its entirety. It is therefore possible that the diminution in the sensation of hunger may be a form of adaptation in conformity with the lessened efficiency of the organism as a whole, and of the digestive organs in particular.

Furthermore, a reduction of the stimulus which arouses the conscious desire for food may be of indirect service in yet another way. There is no absorption of material for repairing the waste of tissues; it is consequently of importance that there should be no misapplication of energy, which a fruitless search for food would certainly involve. In corroboration of this suggestion is the fact that stimulation of the special senses by the sight or smell of food, tends to excite the latent sensation of hunger, at a time when, other things being equal, the quest for food will most probably be rewarded.

But in whatever way the phenomenon is to be accounted for, the fact remains, that the sensory threshold for hunger is raised after the first few days of total abstinence. In view of the importance of the sensation of hunger as a driving force in life, it seems possible that we may have here the physiological basis for the way in which the muscular power of the stomach—in relation to the hunger movements—is especially safeguarded during periods of starvation. For since without the necessary stimulus there can be no sensation, it is certainly of advantage that there should be some increase of the stimulus at the same time that the sensory threshold is raised.

Since the muscular activity of the stomach forms the basis for the sensation which arouses the individual to attempt to procure the needful food, it is therefore directly in the interests of self-preservation that atony should be least in the organ during starvation periods. After all it is in much the same way that the brain, heart and lungs, in times of vital stress, are supplied with blood at the expense of organs of less physiological importance.

But of what biological use is the stimulus if it is not sensed in consciousness? It is here that the entrance of psychological factors,

* Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 136.

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such as repression, may interfere with the normal processes of stimulus and response.

The Psychological Factor in Starvation.

To begin with, it is undeniable that the mental factor is of considerable importance in the determination of the subjective experiences which occur during starvation. Thus, as Carlson points out, feelings of exaltation, visual and auditory hallucinations and so on are more frequently reported by religious ascetics than by worldly-minded men starving for purposes of health or science.*

It is interesting that he should be of the opinion that these phenomena are due to depression, not to increase in cerebral excitability, being as he thinks rather akin to dreaming. For these views of the physiologist certainly coincide to some extent with those of the psychologist who attributes dreams, hallucinations, and similar appearances to the action of unconscious forces, which, owing to their partial release from the strict control of the conscious, are able to express themselves in these ways.†

It would be useful to know whether analogous factors operate in the dreams of food which some starving Arctic explorers and hunger-strikers are said to experience. However this may be, they certainly approximate to those " convenience dreams " which are more characteristic of childhood than of adult life.

Carlson's suggestion that the mental phenomena which occur when an insufficient amount of food is taken are due rather to starvation change in the brain and blood than to the action of the gastric motor mechanism has much to support it.‡ Take for instance the fact that in pathological cases no hunger may be felt in spite of strong hunger movements, so also the reverse may hold. Thus Carlson reports that one old dog was eager for food, though it showed virtually no gastric hunger contractions after the third day of starvation, and the stomach appeared distinctly hypotonic.§ This recalls a somewhat similar phenomenon which may occur in old age. As already said, the gastric hunger movements diminish with advancing years. Yet there can be no doubt as to the greed exhibited by some old persons. That their excessive desire for food may be of psychic origin is supported by their generally childish

* Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 136.
† Freud, S., *The Interpretation of Dreams*.
‡ Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 136.
§ *Idem, ibid.*, p. 140.

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behaviour, and the growing tendency to egocentricity and selfishness which is found in these cases; for these latter characteristics, indicating as they do an attempt to return to the narcissistic, even auto-erotic mental attitude of earlier life, at the same time suggest that the avidity for food which these old people display is due to a regression from the genital, or at any rate a later level, to the first or oral stage of libidinal development.

The reverse consideration of the features which may be displayed by the individual as he passes from childhood to the full maturity of adult life shows that this is not merely a theoretical conception. Take, for example, the way in which the eagerness for food commonly displayed during the prepubertal period may be succeeded by the opposite tendency after the onset of puberty, when the step from almost complete self-love to an object-love is in progress.

The distaste for food evinced by the love-sick swain may from this point of view be regarded as an indication of the partial displacement of unconscious factors connected with the instincts of self-preservation by those connected with race-preservation, *i.e.*, the erotic life of the more fully developed personality. In the same way it seems possible that the greed of old age may be the manifestation of similar unconscious processes, working, however, in the reverse direction to a lower, *i.e.*, to an earlier stage of development.

Hunger and Acceleration of the Heart-Beat.

These considerations illustrate the fact that the appreciation of the sensation of hunger is psychologically as well as physiologically determined. At the same time it is also true that the gastric hunger contractions, whether detected or no in consciousness, may have results both physical and psychical.

The mental aspect of the matter has already been referred to in the sections dealing with dreams and sleep. With regard to the physiological side, attention is called to Carlson's finding that an increase in the amplitude of the gastric hunger contractions is accompanied by an approximately proportional acceleration of the heart-beat.*

It is of interest that the physiological stimulus for the sensation of hunger has thus an influence upon the heart's action similar to that of the emotions in general, because such a cardiac response

* Carlson, A. J., "The Influence of the Contractions of the Empty Stomach in Man on the Vaso-motor Centre, on the Rate of the Heart-beat, on the Reflex Excitability of the Cord," *Amer. Journ. of Physiol.*, 1913, xxxi, p. 320.

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serves the purpose of hunger in its relation to instinctual life—namely that of stimulating the organism to seek for food; the increased supply of blood to the muscles which such a quest involves is well met by this quickening of the heart.

In spite, however, of these points of contact there is evidence that the tachycardia of emotional origin, and that which accompanies an increased amplitude of the hunger movements, are dependent upon mechanisms of a somewhat different character.

The stimulating effect of the emotions upon the sympathetic, which in turn causes an acceleration of the heart, offers a satisfactory explanation of the phenomenon in the one instance. But the tachycardia in the second case is not so easily accounted for. Thus sympathetic stimulation, which quickens the heart, inhibits the hunger movements, in the same way that vagal stimulation, which excites the gastric hunger movements, has a depressing action on the heart.

These considerations indicate either that the associative mechanism in question has a somewhat complex relation to the extrinsic nerves—the vagus and sympathetic—or else that it is replaced by some other connection. These two alternatives will now be referred to here.

With regard to the first, it is true that the quickening of the heart which accompanies an increase in the amplitude of the gastric contractions may be an example of depression following vagal stimulation—a phenomenon which is thought to be present in association with the receptive relaxation of the stomach which occurs on swallowing.*

On the whole, however, it seems more probable that the mechanism involved is independent of both vagal and sympathetic influence. Most significant in this connection is the fact that the muscular power of both heart and stomach is ultimately governed by an automatic neuro-muscular apparatus in their walls;† to this primitive organization the vagus and sympathetic are in each case merely accessory, useful for its more efficient regulation and control. This suggests that there may exist an associative mechanism between the two organs which antedates the influence of the extrinsic nerves.

However the phenomenon is accounted for, the fact remains that the vagus, in exciting the gastric hunger contractions, is responsible for an associated acceleration of the heart-beat. Thus the unconscious, in expressing itself through the medium of this nerve,

* May, W. P., "The Innervation of the Sphincters and Musculature of the Stomach," *Journ. of Physiol.*, 1904, xxxi, p. 264.

† Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 160.

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may lead not only to an accession of gastric hunger contractions, but also to tachycardia. In this way we have, paradoxically enough, an acceleration of the heart, which is, though secondarily, a vagotonic symptom.

Similar and Contrasting Effects of Fear and Hunger.

This circumstance derives additional interest in view of the over-sensitivity to changes in the action of the heart which is especially characteristic of certain anxiety neurotics. This fact is again of importance, since, as is well known, the disordered action of the heart in these "functional" cases is not merely perceived—it is also sensed with fear.

Fear in such patients has a double significance. In the first place it is representative of the pathological situation underlying the neurosis, and secondly it is both directly and indirectly an important determinant of much of the symptomatology of these cases. The exaggerated sensitivity to the action of the heart referred to above is clearly an instance of the latter point.

These considerations have a further value here in view of the explanation which they offer for the fact that hunger is neither a constant, nor even a usual, feature in these cases. To enter into more detail. The gastric hunger contractions must reach a certain intensity before they are perceived in consciousness; it thus happens that an exaggerated sensitivity to the accompanying acceleration of the heart may cause the cardiac action to be perceived first. Complications are introduced by the fact that the fear aroused by this perception stimulates the sympathetic, which at the same time that it maintains, even augments, the rate of the heart, inhibits the gastric movements

The workings of the unconscious seem to be seen plainly in this fear and its results, removing as they do the focus of attention from the real cause, in this case from the psychological to the physiological, so incidentally adding both to the difficulties of diagnosis and of successful therapy.

Z— appears to be an example of such a case. It has been pointed out that vagotonic symptoms, both negative and positive, characterized his history. Nevertheless apparently causeless acceleration of the heart was an occasional symptom which gave him acute anxiety. Its prominence in consciousness, and its occurrence at times of mental rather than physical stress, seemed to him good grounds for thinking that the cause was organic.

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His whole history serves to indicate that the distress which this possibility aroused in him was to be attributed to the factors, the whole situation, underlying the fear. Thus fear, which in his case was part of a general mental tendency, betrayed in many ways the influence of unconscious factors. Take, for example, the feelings of guilt and the associated desire for self-punishment which he exhibited, and the active expression which these found in his excessive concern in all matters connected with his health, together with the constant dread in which he lived, lest, significantly enough, some action of his own might do him harm.

His liability to fear and the attacks of compulsive hunger from which he suffered are of further interest as an example of symptoms whose physiological results are in some respects similar, and in others are opposed. The possible reasons for their similar action upon the heart have already been discussed. Those connected with their antagonistic effects upon the stomach which remain for consideration, do not, however, appear to offer the same difficulty.

It is obviously to the advantage of the individual that the emotions associated with the sensation of hunger should promote the gastric hunger contractions, since these are the stimuli for the very sensation which is such an important driving force when there is need for food.

In the case of fear, on the other hand, all energy is needed for purposes of flight or defence. It is, therefore, in the interests of self-preservation that all blood available should be diverted to the organs and muscles which subserve this end. The alimentary canal being in no way concerned here, it is therefore to the animal's advantage that all movements of the filled and empty stomach should be temporarily inhibited until the need is passed—and this we find to be the case.

Appetite and the Movements of the Stomach.

This recalls to our notice the well-known fact that the gastric hunger contractions are not the only stomach movements—those of digestion must also be taken into account. As their different functions would alone suggest, these two phases of gastric motility are to a large extent distinct. Nevertheless there is much to indicate that in some ways they are intimately connected. Thus Rogers and Hardt have come to the conclusion that the gastric

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hunger contractions are strong peristaltic contractions in a stomach which is hypertonic as compared with its normally filled condition.*

It is of interest, in view of the subject-matter of this paper, that hunger and appetite to some extent illustrate these points of similarity and of difference.

It has already been indicated that appetite usually, if not always, accompanies the sensation of hunger. Nevertheless the entrance of food into the stomach, which inhibits the gastric hunger contractions, and therefore the sensation of hunger, not only tends to excite the movements of digestion, but also favours for a while the continued presence of, and may even cause an initial increase in, the sensation of appetite.

The contrast which appetite thus offers to hunger seems to be connected with its physiological function of assisting the processes of digestion. Thus the psychic secretion of juice, which Pavlov found, results when appetite is aroused by the sight, smell and taste of palatable foods is of direct chemical assistance to digestion.†

More than this, it is also probable that this secretion promotes the movements of digestion. Thus the fact that the intensity of the movements of the gastric antrum increases as digestion advances‡ in itself suggests that they are facilitated by a certain degree of acidity. Similarly, the use of acids for the purpose of promoting appetite may also be recalled here. On the other hand, gastric juice of full normal acidity and other similar acid solutions inhibit the gastric hunger contractions.§

These considerations serve to explain an apparent anomaly It is well known that alcohol, in small quantities before a meal, has a stimulating effect upon appetite. Nevertheless, when introduced into the stomach in quantities and concentrations that directly affect the tonus and contractions of the stomach, it causes inhibition and inhibition only.‖

The similarity of its action in these ways to that of acids and palatable foods renders it likely that it may also favour the movements of digestion. However this may be, it seems certain that it does not inhibit them, for if it did, as Carlson says, even moderate drinking with meals would cause acute indigestion.¶

* Rogers, F. T., and Hardt, L. L. J., "The Relation Between the Digestion Contractions of the Filled, and the Hunger Contractions of the 'Empty' Stomach," *Amer. Journ of Physiol.*, 1918, xxxviii, p. 283.

† Pavlov, I. P., *The Work of the Digestive Glands*, p. 89.

‡ Carlson, A. J., *The Control of Hunger in Health and Disease*, p. 176.

§ *Idem, ibid.*, p. 175.

‖ *Idem, ibid.*, p. 179.

¶ *Idem, ibid.*, p. 180.

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Appetite, therefore, contrasts strongly with hunger in the close connection which it presents both with the processes of digestion and with the special senses—for instance in its relation to palatable foods, acids and so on. Additional evidence is thus supplied in support of the existence of a real qualitative distinction between the two sensations, allying hunger to the more primitive, and appetite to the more highly developed and more recently evolved aspects of the mind.

The Mechanism of the Filled and Empty Stomach.

The distinction between these two types of gastric movement is further emphasized by the finding that they are to some extent localized in different regions of the stomach. Thus, whereas the gastric hunger-contractions involve largely the cardiac region,* the movements of digestion are primarily connected with the pyloric portion of the stomach.†

These facts appear to indicate that the empty and the filled stomach involve in part different mechanisms. Nevertheless, as W. P. May pointed out more than twenty years ago, this variation in motor response to otherwise similar stimuli may be due to what may be called a regional distinction which is dependent upon the gastric function concerned.‡

Take, for example, that receptive relaxation which occurs on swallowing. Probably confined to the cardiac portion of the stomach, this reciprocal innervation of antagonistic muscles is controlled reflexly by the vagus nerve; it therefore seems that we may have here an instance of vagal stimulation which is followed initially by inhibition. The possibility that this phenomenon is secondary to gastric function is confirmed by the subsequent slow augmentor effect; for the resultant closure of the cardiac sphincter prevents the food from passing back into the œsophagus, at the same time that the contraction of the cardiac region presses the food forward into the pyloric portion of the stomach.

This temporary depression following vagal stimulation, like the acceleration of the heart-beat which accompanies an increased amplitude of the gastric hunger contractions referred to above, is to be sharply distinguished from the effects of sympathetic stimulation. This is not only of theoretical, it is also of practical importance,

* *Idem, ibid.*, p. 79.
† *Idem, ibid.*, p. 176.
‡ May, W. P., "The Innervation of the Sphincters and Musculature of the Stomach," *Journ. of Physiol.*, 1904, xxxi, p. 264.

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since it draws attention to the part which function may play in the determination of both mechanism and structure. That the converse also holds it is hardly necessary to point out.

Appreciation of the action and interaction which takes place between these components—structure, mechanism and function—brings us to the further consideration of the far-reaching effects which may result from what was initially, perchance, of but small pathological import. It is for this reason that though the differential characters which the viscera contribute to an emotional complex are probably in general of but relatively small significance, yet the fact that they may come into operation must not for that reason be neglected. This consideration is all the more important in view of the fact that factors of but slight or negligible concern in one patient may assume considerable prominence in another. The psychological as well as the individual element is undoubtedly of great importance here.

The Muscle Tonus of the Stomach.

Take, for example, the question of the muscle tonus of the stomach, the exact origin of which is not definitely known.

Cannon, upon the analogy with the psychic secretion of gastric juice, postulates the existence of a "psychic tonus." It is especially interesting that he, a physiologist, should hold this opinion, in view of the fact that, as he says, he has no direct evidence to support his position.*

But surely he himself supplies an even stronger argument than that of mere similarity in favour of his assumption, at any rate in certain pathological cases, when he points out that bulimia is a neurotic disturbance of the tonic innervation of the alimentary canal;† for the question of neurotic malfunction introduces the mental factor, and with it the possibility that psychological investigation may be necessary to demonstrate the existence of a psychic tonus inaccessible to methods of a purely physiological nature.

Certainly consideration of Z—'s case tends to support Cannon's hypothesis, since in him we find that repressed, *i.e.*, psychic factors, are responsible for the derangement of his gastric motor mechanism which is dealt with here.

* Cannon, W. B., *The Mechanical Factors of Digestion*, p. 200.
† *Idem, Bodily Changes in Pain, Hunger, Fear and Rage*, p. 294.

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Effects of Different Stimuli upon the Gastric Hunger Contractions.

The predominating importance of the psychological factor in his case is still further emphasized by the fact that his attacks of compulsive hunger, and the related incapacity, are often relieved by quite a little food, *e.g.*, a banana or a biscuit.

This observation has an additional interest, since it brings his case once more into line with physiological research, for Carlson found that the degree of inhibition of the gastric hunger-contractions is unconnected with the amount eaten. Rather does it appear to be governed by the vigour of the stomach activity—the gastric inhibition varying inversely with this component—and with the concentration and type of the food eaten, it being found to be in the latter case proportional to the concentration of the substance tasted. Sweet, sour, salt or acid articles are definitely inhibitory,* chewing indifferent substances has a less pronounced effect,† while masticating with the mouth empty causes no observable change at all.‡

The last point is interesting, since it seems to confirm the psycho-analytic theories as to the erotic significance of sucking§, indicating as it does that pleasure may be derived from active movement of the mouth, independently of the satisfaction which is derived from the food as such.

The possibility that the enjoyment so obtained has an erotic significance is also supported by the observation that children who suck the finger, in adult life show a fondness for kissing.‖ In addition the severity with which adults suppress sucking the finger and other so-called " bad habits " of children, otherwise somewhat surprising, is, significantly enough, in keeping with the degree of repression of the sexual instinct which characterizes present-day civilization.

The Interdependence of Hunger and Sex.

In this way both psychological and physiological observation seem to draw a somewhat sharp distinction between the enjoyment

* Carlson, A. J., " The Contractions of the Empty Stomach Inhibited Reflexly from the Mouth," *Amer. Journ. of Physiol.*, 1913, xxxi, p. 215.
† *Idem, ibid.*, p. 217.
‡ *Idem, ibid.*, p. 217.
§ Freud, S., *Three Contributions to the Theory of Sex*, 1925, p. 42.
‖ *Idem, ibid.*, p. 44.

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derived from the satisfaction of hunger, *i.e.*, by the taking of food, and that obtained by the gratification of the oral or sexual libido, *e.g.*, by contact and so on.

At the same time it seems certain that the two types of pleasure are never entirely independent. It appears, indeed, that, as in earliest infancy, so to some extent in later life, the sexual libido never ceases entirely to lean upon the instinct of self-preservation, in much the same way that narcissism is never wholly swallowed up in object love.

Thus the lack of appetite characteristic of the anxious lover is normally of but short duration. Again, other things being equal, the man tortured by the pangs of starvation is unlikely to attend to his more directly libidinal needs before he has satisfied his hunger.

The degree of interdependence and interaction which exist between self and race preservation is illustrated in many ways. Take, for example, Z—'s case, where, as already mentioned, the onset of his bulimia coincided with the time at which he began his habit of masturbation. That the simultaneous disturbance of these two instinctual mechanisms, biologically of the first importance, was not " mere chance," is justified by the fact that the same association was repeated in the two main symptoms for which he came for treatment, namely masturbation and inability to have several badly decayed teeth extracted. With regard to the latter question, the mere thought of the dentist caused him discomfort, while closer consideration of the matter threw him into such a state of terror that he was utterly incapable of proceeding further. He realized, indeed, that unless his mental attitude changed, the only force which could make him go to the dentist was unbearable toothache.

The possibility that his unconscious was utilizing for its own ends such organic disease as was present, is suggested by the fact that not infrequently he had slight toothache when the desire to masturbate, which consciously he wished to resist, was becoming imperative. Significantly enough, compliance with this demand was followed by almost simultaneous relief of the pain.

At other times, more especially when he had " given way to the habit " as he put it, toothache would be associated with an attack of hunger. In this case a small amount of food sufficed to put an end to both, indicating that the food acted more in virtue of its secondarily acquired psychological characteristics than of its physiological properties.

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General Review.

Thus once more the importance of the psychological factor is brought to our notice—the more remarkable when it occurs in a matter which would appear to belong rather to the sphere of physiology. Not that the action is one-sided. On the contrary, as the findings recorded in this paper serve to indicate, the perplexities of medical diagnosis are largely due to the action and interaction which so constantly takes place between mind and body.

It may be urged that this is but a commonplace of medicine—the difficulty in differentiating functional from organic disease has for so long been recognized. Nevertheless, not only does the tendency to specialization in present-day medicine in itself suggest the advisability of a corresponding correlation of the independent results so obtained, but the findings of this paper have seemed to indicate that such an undertaking may have a real value of its own. How far this is the case may perhaps be best shown by a reference to some of the more important conclusions which have been reached in this survey.

In the first place we have seen that though there are many points of similarity and connection between hunger and appetite, nevertheless, data, both physiological and psychological, support the proposition that there is a qualitative distinction between the two sensations.

From the physiological standpoint it has been shown that the cerebral cortex is essential for the existence of appetite. This, however, is not the case with hunger—it is even doubtful whether it possesses a cortical connection at all. For several reasons, which have been mentioned, it seems likely that its end-station is some lower nerve centre—in all probability the optic thalamus.

Psychological investigation also demonstrates the more primitive nature of hunger. The greater readiness with which it finds expression in bodily reactions is largely due to its closer contact with the life of the instincts and emotions. Appetite, on the other hand, in consequence of its connection with the processes of perception and cognition, is considerably affected by external stimuli, and is to that extent less influenced by those of internal origin.

Such physiological and psychological observations have led to the formation of the hypothesis brought forward in this paper that hunger is related to the unconscious and appetite to the conscious aspects of the mind. Supported alike by physiology and psychology, this proposition is further reinforced by the consideration

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that it offers a feasible explanation of certain phenomena in connection with hunger and appetite, for which it is otherwise difficult to account. In addition it appears to afford insight into a possible mechanism governing the interplay between mind and body.

Take, for example, the physiological finding that the gastric hunger contractions are not only the stimulus for the sensation of hunger, but may also be excited by vagal action. These observations, taken in conjunction with the hypothesis under consideration, suggest the possibility that at least some cases of compulsive hunger may be due to the influence of certain repressed unconscious desires, which, unable to express themselves in the normal way, find some outlet by their stimulating action on the vagus.

New possibilities are opened up by this premise. Carlson found, in the course of his experimental work on hunger, that the gastric hunger contractions, unlike other organic functions of like nature, are maintained, even augmented, during sleep. Psychology, however, is able to offer a solution for this apparently anomalous physiological finding. During sleep the unconscious is allowed freer play than during waking life; it follows, therefore, that the gastric hunger contractions should be undiminished, possibly increased, at this time.

Then, again, the possibility has been advanced that certain cases of disordered action of the heart may be primarily due to a neurotic disturbance of the hunger mechanism. This phenomenon may be accounted for as follows: There is a known association between the rate of the heart and the amplitude of the gastric hunger contractions. In this way tachycardia may be induced by an increase in these stomach movements, even when the latter have been caused by vagal action, owing, for example, to the activity of unconscious forces. Further complications arise in those instances where fear is evoked by the perception of the heart's action. Thus the resultant stimulation of the sympathetic, at the same time that it maintains, maybe augments, the quickening of the heart, inhibits the gastric movements. The complexity introduced by the interplay between psychological and physiological factors is well illustrated here.

As physiology is assisted by psychology, so the converse also holds. Thus Freud's dictum that the dream is the guardian of sleep is supported by Carlson's experimental finding that the gastric hunger contractions, which, when strong, may disturb sleep, are inhibited when there is much dreaming.

It is also noteworthy that the correspondence which has been traced in this paper between the main aspects of appetite and hunger

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and Freud's concept of the ego and the id, is supported quite as much by physiological as by psychological considerations.

Conclusion.

Other examples could be cited, but those already given suffice to show that considerable correspondence obtains between the independent findings of physiology and psychology on the related topics of hunger and appetite. Before, however, leaving this aspect of the matter, I should like to point out that the latter part of this paper has tended to confirm the accuracy of these and similar considerations.

It is, however, not for this reason alone that the present method of investigation would seem to be of value.

In the first place, where there has not been complete accord in the conclusions reached by the two sciences, attention has thus been drawn to the need for a revision here—a fact of especial importance in those cases where the requirement for further scrutiny was not so immediately obvious. Furthermore, it has been possible by this means to suggest on occasion another line of approach, even a tentative solution, to certain problems which have been raised, but have not been satisfactorily solved by the sister science.

There appears, therefore, to be justification on several counts for the present attempt to correlate the findings of physiology and psychology in connection with hunger and appetite. Of service to the individual sciences immediately concerned, it has also thrown light upon these related subjects in association with medicine as a whole.

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THE CONDITIONED REFLEX AND SOME PSYCHOLOGICAL ANALOGUES.*

By A. WOHLGEMUTH, B.Sc.Lond.

PSYCHOLOGY was for centuries a part of philosophy, the happy, undisputed hunting-ground of the speculative metaphysician. With the beginning of the nineteenth century a new era dawned gradually for psychology. Anatomists, physiologists and physicists began to invade this reserve of the metaphysician. These early attempts of Gall and Spurzheim, Johannes Müller, E. H. Weber, Du Bois Reymond, Helmholtz, Lotze, Fechner, Thomas Young and many others are too well known to detain us. They lead up to the work of Wilhelm Wundt and the establishment of psychology as one of the natural sciences, from speculation without facts to speculation allied with experiment. However, as usually happens, the swing of the pendulum goes from one extreme to the other. For whilst the metaphysical psychologist would ignore physiology and neurology, maintaining that what is not itself a phase of consciousness cannot be used to explain consciousness, some of the physiological psychologists would overshoot the mark and attempt a psychology without consciousness. Thus we find the behaviourists (Watson) and the objective psychologists (Bechterew). Pavlov appears to belong to the latter school. But as Prof. Brett, in his *History of Psychology*, rightly says: "Modern psychology lies between two points: it emerges from anatomy and physiology, and terminates in a region where those sciences cease to guide."

Although, then, Pavlov believes in an objective psychology, a psychology without consciousness—a view which I cannot possibly share—his work is, nevertheless, of great importance for the empirical psychologist who is enabled to correlate physiological and neurological findings with his own results. There is the same underlying principle, namely, that of "association," which obtains in

* A paper read at the meeting of the British Association, Bristol, 1930 (Section of Psychology).

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the higher as well as in the lower levels of nervous activity, but, as we shall see, there is a great difference also. Pavlov lays the greatest stress upon the importance of the cerebral hemispheres. They stand out, he says, as the crowning achievement in the nervous development of the animal kingdom. The highest nervous activity is dependent upon the structural and functional activity of the cerebral hemispheres. But Pavlov, as I mentioned before, takes no account of conscious processes; he adopts the objective method in investigating the physiological activities of the hemispheres. His starting-point is Descartes' idea of the nervous reflex, which he sums up as follows:

> "An external or internal stimulus falls on some one or other nervous receptor, and gives rise to a nervous impulse; this nervous impulse is transmitted along nerve fibres to the central nervous system, and here, on account of existing nervous connections, gives rise to a fresh impulse which passes along outgoing nerve fibres to the active organ, where it excites a special activity of the cellular structures. Thus a stimulus appears to be connected of necessity with a definite response, as cause with effect."

Pavlov follows Herbert Spencer, who was the first to suggest that instinctive reactions are reflexes. "Instincts and reflexes are alike the inevitable responses of the organism to internal and external stimuli, and therefore we have no need to call them by two different terms." Reflex, Pavlov thinks, has the better claim of the two, in that it has been, from the very beginning, used with a strict scientific connotation. Here, I think, Pavlov's objective method is insufficient and leads him astray. He evidently confounds instinctive response with instinct. But this is outside the purview of my paper.

Pavlov chooses for his investigation the "alimentary reflex" and the "defence reflex" in the mildest form. I would say the "alimentary instinct" and the "defence instinct," which both give rise to the salivary reflex among others, the former for receiving the food stimulus, and the latter for rejecting the nocuous stimulus. The intensity of the salivary reflex could be measured exactly by the flow of saliva. For this purpose dogs were prepared by subjecting them to a preliminary minor operation. The terminal portion of the salivary duct of the parotid or the submaxillary glands were dissected, freed from the surrounding tissue, and the duct, with a small portion of the mucous membrane surrounding its natural opening, was carried through a suitable opening

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to the outside of the cheek, or under the chin respectively. As a result the saliva flowed outside.

" Dr. Zitovich in Prof. Vartanov's laboratory took several young puppies away from their mother and fed them for a considerable time on milk only. When they were a few months old he established fistulæ of their salivary ducts, and was thus able to measure accurately the secretory activity of the glands. He now showed the puppies some solid food—meat or bread—but no secretion of saliva was evoked. . . . Only after the puppies had been allowed to eat bread and meat several times did the sight and smell of these foodstuffs evoke secretion." Pavlov then makes a distinction between these two types of reflexes—the inborn or instinctive reflexes which are already completed at birth, and the signalizing or conditioned reflexes which are acquired by experience.

The usual way to establish a conditioned reflex was as follows: A neutral (conditioning) stimulus was applied; visual, auditory, tactile, thermal, were all used. Lights of varying intensity, colours, shapes, position, etc.; sounds of metronomes, buzzers, bells of different pitch, touch, electric shocks, etc. After the application of the neutral stimulus the unconditioned stimulus was applied, *e.g.*, food was introduced into the dog's mouth, or dilute HCl, and the salivary reflex observed. The former was an alimentary reflex and the latter a defensive reflex. After these experiments had been repeated a number of times the neutral stimulus had become a signalizing or conditioned stimulus and produced the conditioned reflex, *viz.*, the flow of saliva, the relative strength of which could be estimated by counting the drops during a given period.

I come now to my first example of the similarity between certain conditions essential to the establishment of a conditioned reflex and certain conditions obtaining in what is known as the association of ideas. There is, however, a most remarkable difference in these two levels, the physiological and the psychological, which I must emphasize.

One of Pavlov's earliest results was this: It is absolutely essential in order that a neutral stimulus may become a conditioned stimulus that the neutral stimulus should precede and partly overlap the unconditioned stimulus. If the neutral stimulus started later than the unconditioned stimulus, then no amount of repetition of the experiment would cause the neutral stimulus ever to become a conditioned stimulus. Pavlov's attempts to explain this observation by theories of inhibition and facilitation (*Bahnung*) are not particularly convincing Besides, no new theories are required,

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as the phenomenon is quite understandable by well-known laws. The Bell-Majendie law states that in a reflex arc an excitation travels in one direction only. Excitation of the spinal end of a severed anterior or motor root produces neither a reflex action nor a sensation. This is a particular case of William James's law of " Forward Direction " of conduction in the central nervous system. It is now generally assumed that the synapses act like valves, allowing excitations to pass in one direction only; they are irreversible. This " Law of Forward Direction " obtains at the lower nervous levels, as, *e.g.*, those of physiological functions, and of motor experiences. At the higher psychic levels (at present I can, it is true, only speak of visual experiences) it does not obtain.

Some time ago I undertook an experimental investigation on " simultaneous and successive association."(1) I used the classical material of nonsense syllables and confirmed the results of previous workers, such as Ebbinghaus, G. E. Müller, Schumann and Pilzecker. But I also made use of more suitable material, namely, colours and diagrams, and here I obtained quite different results.

The following is a summary of the analysis of the answers:

	Pairs of colour diagrams.		Pairs of syllables.	
	Forward.	Backward.	Forward.	Backward.
Absolute number of scores	116	122	80	40
Ratio	0·95	1	2	1
Median R.T.	2·4″	2·1″	2·6″	3·6″

When the first member of the pair was given to the observers during the examination 116 scores were obtained against 122 scores when the second member was given; *i.e.*, the ratio of correct answers was forward : backward :: 0·95 : 1, that is, practically equal, and the R.Ts. were also nearly equal. With nonsense syllables, however, things were different. When the first member of a pair was given to the observers 80 scores were obtained, against 40 scores when the second member of a pair was given. We have, then, a ratio of forward : backward :: 2 : 1, and a much longer R.T. for backward reproduction. As the experimental conditions were the same in both sets of experiments I concluded that this great difference must be due to the material; and as introspection showed that in the learning of the nonsense syllables a strong motor factor, the inward pronunciation of the syllable, was

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present, which was absent in the case of the colour and diagram pairs, I suspected that this motor factor caused the remarkable difference in the ekphory (*i.e.*, reproduction). From this I argued that if the motor factor could be eliminated and the syllables learnt by sight alone, they should behave exactly like the colour-diagram pairs. I tried to accomplish this, *i.e.*, suppress the motor factor, by making my subjects, whilst learning, pronounce aloud the word "ten" every time a syllable appeared in the window of the apparatus. I was much gratified to find the result as anticipated. Here are the figures:

	Pairs of syllables learnt with elimination of motor factor.	
	Forward.	Backward.
Absolute number of scores . . .	98	92
Ratio	1·06	1
Median R.T.	3·3″	3·6″

These results show quite distinctly, I think, that the direction of association, as shown by ekphory, is of equal force in both directions, forward and backward—that it is reversible.

I suggested that this class of memory of the highest cortical levels, to which the visual memory belongs, and which is characterized by the reversibility of direction of association, be called "*psychological memory*"; and that class to which motor experiences and physiological functions like Pavlov's conditioned reflexes belong, and that is characterized by the irreversibility of forward direction of association, "*physiological memory*."

My next case will be one of more complete analogy between the physiological level of the conditioned reflex and that of psychic experiences. As we have seen, the scheme of Pavlov's conditioned reflex is as follows: An unconditioned stimulus produces a reflex. A dog is given food and saliva is secreted. A produces R. If, now, A is accompanied by a neutral stimulus, B, as already described, say the ringing of a bell, then the production of B is soon followed by R:

$$\begin{matrix} A \\ B \end{matrix} \rightarrow R, \text{ then } B \rightarrow R.$$

As to the psychological analogue, I have to mention that some time ago I carried out an investigation of the feeling elements, pleasure-unpleasure(2), to begin, as it were, a natural

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history of the feeling elements, uninfluenced by any metaphysical bias or consideration which had spoiled previous work. When this lengthy investigation was finished I carefully worked through the records and extracted and tabulated the results, which I formulated into "rules." Of these so-called rules there is one that is of interest here, *viz.*, rule 49, which I express as follows: If a cognitive process (*A*) is accompanied by a pronounced feeling element or an emotional process (*R*), and another cognitive process (*B*) more or less neutral occurs at the same time, then on a future occasion, when the second cognitive process (*B*) is ekphorized, it may be coloured by the emotional process (*R*). I called this rule the Rule of the Transference of Feeling. We have, then, here a psychological analogue to Pavlov's conditioned reflex.

The importance of this rule to psychiatry will be realized when we use it in the elucidation of some of the neuroses. I have many cases of psychogenic asthma, recurring pain, sea-sickness, anxiety states, etc., where the rule gives a satisfactory explanation without violation of common sense or recourse to a mystical and mythological "unconscious." I shall illustrate this rule by applying it to the often quoted case of claustrophobia of Rivers, because Rivers accompanied it by some very strong comments.

The case was that of a medical man, who, from childhood, had suffered from a dread of being in an enclosed space, and especially of being under conditions which would interfere with his speedy escape into the open. When Rivers saw him first, the patient's earliest memories went back to the time when at the age of six he slept with his elder brother in what is known in Scotland as a box-bed. The bed stood in a recess with doors which could be closed, so as to give the appearance of a sitting-room. The child slept on the inner side of the bed, next to the wall, and he still vividly remembered his fears and the desire to get out of bed, which he did not satisfy lest he wake his brother. He would lie in a state of terror, wondering if he could get out if the need arose. The patient had been treated by psycho-analysis by a follower of Freud. He was told that the cause of his trouble certainly lay in some forgotten experience of childhood of a sexual nature. When he related his dreams they were invariably interpreted by means of symbolism of a sexual character. This process of psycho-analysis had no result which satisfied the patient. On the contrary, after two months of it his sleep became so disturbed, and his general condition so much worse, that he gave up the treatment and returned home. Nevertheless he was left with the firm conviction that the root of

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his trouble lay in some forgotten sexual experience. This belief was so strong that he was thinking of going to Vienna to consult Freud himself. The outbreak of the war interfered with this plan. As soon as he had sufficiently recovered from his nervous breakdown he joined the R.A.M.C. and was sent to France, where he came under Rivers. Rivers explained to the patient that his claustrophobia was probably due to some forgotten occurrence where he experienced terror, but that it need not be of a sexual nature. The patient was told to note his dreams carefully and to think them over and try to trace their elements back by free association to their source. As he became accustomed to this he was able to recall more and more forgotten memories, until at last he remembered the following incident, which proved to be the key to the situation. It was a visit at the age of four years to an old rag-and-bone merchant who lived near the house which his parents occupied. This old man was in the habit of giving boys a halfpenny when they brought him anything of value. The child had found something and had taken it alone to the old man's house. He had been admitted through a dark narrow passage, from which he entered the house by a turning about half-way along the passage. At the end of the passage was a brown spaniel. Having received his reward, the child came out alone to find that the door by which he had entered the passage was shut. He was too small to open it and the dog at the other end of the passage began to growl. The child was terrified. His state of terror came back to the patient vividly as the incident returned to his mind after all these years of oblivion in which it had lain. The patient was cured of his claustrophobia and remained so.

Discussing the theoretical aspect of the case Rivers says: "What is needed here is some definite explanation of the process by which the acute and fully conscious terror of the child became converted into forgotten experience, which was only restored to manifest consciousness after many years. What can have been the nature of the process by which the fully conscious and vivid terror of the infant of four was converted into something unknown and unsuspected, working in subterranean fashion to reproduce a vague state of terror whenever the patient was exposed to conditions similar to those of his infantile experience." Now Rivers's definite explanation amounts to this: The terrifying experience was repressed to get rid of it—repressed into the stygian regions of the "unconscious." Restrained and pent up here, its energy at times exploded, causing upheavals in the conscious strata above. But

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this is metaphor, mythology, not scientific explanation. The latter we find in the simple law of the "Transference of Feeling," and this psychological fact has as its parallel the physiological level in Pavlov's conditioned reflex, $\frac{A}{B} \rightarrow R$:

A = the primary experience of the growling dog, which produced—

R = the accompanying emotion of terror.

B = the accompanying neutral experience of the enclosed space.

B when occurring again later alone produced R.

These two examples must suffice; there are further psychological analogues of the conditioned reflex. "The phenomena of mutual induction," says Pavlov (3), "provide a physiological basis for the large group of contrast phenomena described in connection with the physiology of the sense-organs. Here, therefore, we are confronted with a further illustration of the successful application of the objective method to the study of problems hitherto considered to be exclusively within the domain of subjective investigation." This question requires a special investigation, but meanwhile it appears to me that Pavlov's claim is unwarranted. The objective method may run parallel with subjective observation, one method producing results that are analogous to those of the other, but that is all. As Prof. Brett observes "Psychology is justified in setting problems for physiology, saying that the function is known and the organ must be looked for."

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THE PROTEIN PARTITION OF THE SERUM IN GENERAL PARALYSIS OF THE INSANE, WITH SPECIAL REFERENCE TO TREATMENT.

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It is generally known that the normal ratio between serum albumen and serum globulin is altered in general paralysis.

In the present investigation an attempt has been made to discover how far the abnormal protein partition ratio of general paralysis is affected by pyretic treatment, and further in what degree such treatment will affect the protein partition in non-syphilitic sera.

Variations of the relative amount of albumens and globulins in the serum have been studied in many diseases, and especial interest has been taken in the changes in syphilitic infection with a view to a possible explanation of the Wassermann reaction.

Noguchi (1) demonstrated a relative increase of serum globulins in syphilis, and thought that this change ran parallel with the intensity of the Wassermann reaction. Later observations (3) did not confirm this view, and it is now certain that increase of globulins *per se* will not change the result of the complement-fixation test. Increase of globulins in the process of immunization has been demonstrated, but is no measure of the degree of immunity established.

The most marked changes of the protein partition ratio are associated with infections or toxæmias, and have been variously ascribed to (1) a greater resistance of the globulins of the serum towards toxins; (2) altered permeability of tissue-cells; and (3) tissue protein destruction.

None of these theories has received much experimental support, nor are we aware, that similar changes occur in any of the tissue fluids other than the cerebro-spinal fluid.

The protein partition does not appear to be affected by food metabolism, nor does it bear any relation to leucocytic variations.

The globulin fraction of the serum appears to bear an intimate relation to the antibodies present, and further, the albumen-globulin ratio is an expression of the colloidal stability of the serum, as evidenced by the concomitant variations of the sedimentation velocity of the red corpuscles.

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Technique.

The protein partition was determined in a number of sera by the following method:

The sera were separated from non-oxalated blood and used as fresh as possible. Prolonged contact with the clot was avoided by early separation; specimens of sera showing any hæmolysis were rejected.

The colorimetric method first described by Wu (2) for the determination of plasma proteins and applied to the cerebro-spinal fluid by Ling and Hewitt was used for the estimations, and was departed from in one or two minor details only.

Procedure.

The sera were diluted 1:10 with physiological saline and the total protein and the serum albumen were separately determined.

(1) Total Protein.

1 c.c. of the diluted serum was pipetted into a centrifuge tube and 5 c.c. of saline added.

The total proteins were then precipitated by the addition of 1 c.c. 2/3 N. sulphuric acid and 1 c.c. of 10% sodium tungstate. After stirring and allowing to stand, the tube was centrifuged and the supernatant fluid decanted as completely as possible. The precipitate was then dissolved in 1 c.c. of 10% sodium tungstate, 5 c.c. of saline added, and the protein again thrown down with 1 c.c. of 2/3 N. sulphuric acid. After centrifuging, the supernatant fluid was decanted.

(2) Albumen.

To 2 c.c. of the diluted serum in a centrifuge tube 2 c.c. of saturated ammonium sulphate were added and, after stirring, the mixture was allowed to stand overnight to precipitate the globulins. The tube was then centrifuged, 2 c.c. of the supernatant fluid, containing albumen only, taken, and a double precipitation with 2/3 N. sulphuric acid and 10% sodium tungstate carried out as above.

The precipitates under (1) and (2) were then severally dissolved by the addition of two drops of freshly prepared 20% sodium carbonate solution in 5 c.c. of distilled water and the contents transferred to 25 c.c. flasks, the centrifuge tubes being washed twice with distilled water.

0.5 c.c. of phenol reagent and 3 c.c. of 20% sodium carbonate were then added and, after shaking, the volumes made up to 25 c.c.

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Standards containing 0·1 mgrm. and 0·2 mgrm. of tyrosine respectively were treated in exactly the same manner. The colours developed were read by the colorimeter after 40 minutes.

1 mgrm. of tyrosine gives the same coloration with the reagents as 27·5 mgrm. of albumen or 25·2 mgrm. of globulin.

The globulin value is obtained by taking the difference between the tyrosine equivalents of (1) and (2) and multiplying by the appropriate factor.

Wu, in a later communication, states that if sodium hydroxide is used instead of sodium carbonate in developing the colour there is no tendency for the final solutions to become turbid. The turbidity, which may depend upon traces of bicarbonate, is not encountered, however, if the sodium carbonate solution is freshly prepared upon each occasion.

The Serum Protein Partition in the Normal (Non-Syphilitic) Subject.

The protein partition of a series of normal control cases, in each of whom the Wassermann reaction was negative, was first investigated by this method (Table I).

The total protein in this series ranged from 5·24% to 7·58%, with an average of 6·36%, whilst the percentage of globulins in the total serum protein varied between 20% and 32·9%, with an average of 29·2%.

Table I.—*Normal Sera.*

Wassermann reaction.	Total protein.	Albumen.	Globulins.	Percentage globulins.
Negative	7·58	5·08	2·50	32·9
,,	5·88	4·22	1·26	23·4
,,	6·82	4·65	2·17	31·3
,,	7·40	5·15	2·25	30·4
,,	5·93	3·97	1·96	32·9
,,	7·36	5·16	2·20	29·9
,,	5·54	3·85	1·69	30·5
,,	6·98	4·72	2·26	32·4
,,	5·24	4·19	1·05	20·0
,,	6·43	4·56	1·91	29·7
,,	5·67	4·26	1·41	24·8
,,	5·60	3·84	1·76	31·5
Average	6·36	4·50	1·86	29·2

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The Serum Protein Partition in Untreated General Paralysis.

Estimations were then carried out upon the sera of a series of untreated cases of general paralysis, and these were compared with the sera of paralytics who had undergone various forms of therapy.

Table II represents the results obtained from newly admitted general paralytics who had received no treatment. The average total protein, 6·97%, still lies within normal limits, whilst the average percentage of globulins 33·4%, of the total protein, tends to be higher than in the normal. It will be observed that some of the globulin values lie well within normal range, so that a relative increase of globulin cannot beregarded as an invariable finding in the serum of general paralysis.

Table II.—*Untreated General Paralytics.*

Wassermann reaction.	Total protein.	Albumen.	Globulins.	Percentage globulins.
+40	7·39	4·75	2·64	35·7
+40+	5·62	3·66	1·96	34·8
+40+	6·95	4·45	2·50	27·8
+20	7·34	4·88	2·46	33·5
+10	7·88	4·63	3·25	41·2
+40	6·98	4·58	2·40	34·3
+40+	7·86	5·02	2·64	34·8
+10	8·02	5·68	2·34	29·2
+40	5·93	3·87	2·06	34·7
+40	6·18	4·36	1·82	29·4
+40+	5·87	4·12	1·75	29·9
+20	7·70	4·96	2·74	35·5
Average	6·97	4·59	2·38	33·4

The alteration in the protein partition ratio in general paralysis would not appear to be so great as that reported in the secondary stage of syphilis, and in the present state of our knowledge concerning protein changes in the serum in infections this is what could be reasonably expected. Rowe (3) obtained in his series an average difference of 8% in the globulin fraction in cases of secondary syphilis, using the refractometric method for his determinations.

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The Serum Protein Partition in General Paralysis Treated by Induced Malaria.

Turning our attention to those cases of general paralysis who had just completed a course of malarial therapy and those who had completed a course of treatment with sulfosin a greater disturbance in the protein partition is noted.

Table III represents the results obtained from the serum of patients after treatment with the ordinary course of malaria. There is no material change in the protein content, but the percentage of globulins in this group is persistently higher than normal. The globulin increase bears no relationship to the degree of clinical improvement met with in these patients. It has been reported as a result of investigations in malarial districts (4) that malaria alone, in the absence of other pathological conditions, causes a rise in the euglobulin fraction without materially altering the total globulin. We have had no opportunity of examining the changes in the serum in uncomplicated cases of malaria, but from the above observations it would appear that the globulin increase found in malaria-treated general paralysis is due, at least in part, to the effect of malaria upon the pre-existing pathological condition.

Table III.—*General Paralytics upon Completion of a Course of Malarial Therapy.*

Wassermann reaction.	Total protein.	Albumen.	Globulins.	Percentage globulins.
+40	6·93	4·37	2·56	37·0
+40	7·55	4·50	3·05	40·0
+20	6·19	4·33	1·86	30·0
+40+	5·64	3·41	2·33	39·5
+40	5·72	3·92	1·80	31·5
+40	6·38	3·91	2·47	38·2
+40+	7·21	4·28	2·93	40·6
+30	6·90	4·24	2·66	38·5
+40	6·48	2·90	3·58	54·6
+10	7·32	4·64	2·68	36·6
+40+	7·43	4·69	2·74	36·8
+40+	7·96	4·50	3·46	43·3
Average	6·80	4·14	2·66	38·8

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Various workers who have examined the sedimentation velocity of erythrocytes in mental disorders have reported conflicting results no general paralysis. Thus Paulian and Tomovici and Alexander found the rate increased, whilst Popper and Kreindler found a normal sedimentation velocity in general paralysis. Anderson (5) was unable to confirm the existence of a marked or constant acceleration of sedimentation velocity in general paralysis, but found it increased during malarial therapy. Bearing in mind the part played by the globulin in the colloidal stability of the serum, reference to Tables II and III would lead us to expect the findings given by Anderson.

The Serum Protein Partition in General Paralysis Treated by Sulfosin Injection.

General paralytics treated with a course of ten injections of sulfosin show a deviation of the protein partition ratio with globulin increase which is essentially similar to that found in the malaria-treated cases.

Table IV.—*General Paralytics upon Completion of Sulfosin Treatment* (10 *injections.*)

Wassermann reaction.	Total protein.	Albumen.	Globulins.	Percentage globulins.
+30	6·43	4·05	2·38	36·9
+15	6·20	3·39	2·81	45·3
+30	5·78	3·23	2·55	43·8
+30	6·92	4·30	2·62	37·8
+6	5·49	3·45	2·04	37·2
+30	7·43	4·70	2·73	36·7
+30	7·43	4·70	2·73	36·7
+30	5·93	3·44	2·49	42·0
+30	5·82	3·79	2·03	34·8
Average	6·38	3·89	2·48	39·0

The Serum Protein Partition in Dementia Præcox Before and After Sulfosin Treatment, and Comparison of the Findings with those Obtained from Cases of General Paralysis Subjected to the same Therapy.

It was not possible to obtain a series of normal controls for comparison with the cases of general paralysis treated with sulfosin,

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but, to ascertain the comparative effect of sulfosin therapy on the serum protein partition of the general paralytic and non-paralytic respectively, a series of cases of dementia præcox were given the same course of sulfosin injections and the results obtained are recorded below:

TABLE V.—*Cases of Dementia Præcox Before and After Completion of Sulfosin Treatment.*

Wassermann reaction.	Total protein.		Albumen.		Globulin.		Percentage globulin.	
	Before.	After.	Before.	After.	Before.	After.	Before.	After.
Negative	5·87	5·99	4·09	3·92	1·78	2·07	30·3	34·5
,,	5·81	5·88	4·02	3·62	1·79	2·26	31·9	38·4
,,	6·80	6·73	4·59	4·44	2·21	2·20	32·5	34·0
,,	6·34	6·45	4·48	4·37	1·86	2·08	29·3	32·2
,,	..	5·96	..	3·77	..	2·19	..	36·7
Average	6·20	6·20	4·29	4·02	1·91	2·16	31·00	35·1

The following conclusions appear to be indicated from the results given: The serum protein partition in dementia præcox approximates to the normal. Following sulfosin therapy there is no apparent rise in the total proteins, but there is an alteration of the albumen-globulin ratio with an excess of globulin. During the sulfosin treatment this increase in the globulin fraction can be demonstrated after the third injection and reaches its maximum about the eighth or ninth injection, and in the cases investigated the normal serum protein partition appears to become re-established in approximately one month after cessation of treatment.

Comparing these findings from those obtained from cases of general paralysis who had been subjected to an identical course of treatment (Tables IV and V), it will be seen that the relative effect on the serum protein partition is practically the same; in general paralysis the globulin fraction increases to 38·8% and in dementia præcox to 35·1% but the increase is relatively the same if the respective levels of the globulin fraction before treatment are taken into consideration.

THE SERUM PROTEIN PARTITION IN GENERAL PARALYSIS TREATED WITH TRYPARSAMIDE.

In the general paralytic treated with organic arsenic no constant deviation of the protein partition was discernible by this method of analysis (Table VI). The average percentage of the globulins shows no increase over that found in the untreated case. These

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patients had each completed a course of 32 grm. of tryparsamide without evidence of toxic effects.

TABLE VI.—*General Paralytics after 32 grm. of Tryparsamide.*

Wassermann reaction.	Total protein.	Albumen.	Globulin.	Percentage globulin.
+40+	5·48	3·92	1·56	28·5
+20	6·46	4·23	2·23	34·5
+40	6·26	4·23	1·98	30·2
+10	6·16	3·87	2·29	37·1
+40	6·35	4·70	2·05	32·2
Average	6·14	4·19	2·02	32·5

Throughout the whole series of cases investigated it will be observed that the strength of the Wassermann reaction bears no relationship to the protein partition ratio.

SUMMARY.

1. In untreated general paralysis there is an apparent excess of serum protein with corresponding globulin increase.

2. Following malarial therapy in general paralysis there is no discernible increase of serum protein, but the albumen-globulin balance is disturbed, with an apparent increase of globulin.

3. In general paralysis pyrexial therapy induced by sulfosin appears to affect the serum protein in exactly the same way as malaria; the same sulfosin treatment in dementia præcox is not associated with an increase of total protein, but there is an apparent increase in the globulin fraction.

4. Tryparsamide treatment in general paralysis has no obvious effect on the total serum protein or the albumen-globulin partition.

5. There is no apparent relation between any altered state of the serum protein and the intensity of the Wassermann reaction.

In conclusion I wish to thank Dr. F. L. Golla, Director of the Laboratory, and Dr. S. A. Mann for their assistance and advice in this work, and also those medical officers of the London County Mental Hospitals who facilitated the collection of specimens.

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THE PSYCHOBIOLOGICAL CONSTITUTION OF THE WEAK-MINDED.*

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Introduction.

In recent years the approach to psychiatry has become more and more biological. The point of interest is shifting from the kind of mental illness which a person has, to the kind of person who has the illness. The greatest stimulus in this direction to psychiatry in the last few years was undoubtedly the publication, in the year 1921, of Kretschmer's *Körperbau und Charakter*. Indeed, the stimulus was so violent that nowadays hardly any psychiatric field (not to mention other branches of the biological sciences) has escaped exploration along Kretschmer's lines; and the vast bibliography which has piled up is enough to appal the student of constitutional biology and kindred subjects. For some reason, surprisingly little work has been done on the constitution and temperament of the weak-minded. The object of this present research is to fill the lacuna in some small measure. The neglect of this field of study is surprising, for the reason that weak-mindedness is classified by Kraepelin, the father of modern psychiatry (*Psychiatrische Klinik*, Barth, Leipzig, 1921, Bd. i, S. 23), in the group of the congenital mental disorders; and a congenital anomaly should surely be expected to provide interesting material for biological research. The present writer, then, approached his subject without prejudice and without a thesis. It was his business to study a group of congenitally weak-minded people, and observe and record their physical and temperamental anomalies. The following are some of the questions to which the writer sought

* Thesis accepted for the degree of Doctor of Medicine, Oxford University.

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an answer: Do the weak-minded possess the same physical make-up as the mentally normal? Does their physique fit into the Kretschmerian frame, or do the weak-minded throw up a distinct physical habitus? Is there a correlation between the physical habitus and the degree of weak-mindedness in oligophrenia? Is it possible to determine the temperamental types of these persons, and do the same affinities between physique and temperament obtain in the same way and in the same proportions as in other groups? What are the physical or temperamental characteristics, if any, which have an affinity with criminality in the weak-minded?

Clinical Material.

The clinical material—in all, 110 cases—was carefully selected in accordance with the following principles:

(*a*) The investigations were restricted to the male sex. The reasons for this restriction were that small genital and glandular anomalies are more easily detected in men than in women.

(*b*) Only males who had passed the age of puberty were investigated, for the reason that it is impossible to arrive at a physique-diagnosis with any certainty in the very immature.

(*c*) Only those were selected who, in their clothes, on first appearance, presented an appearance of physical normality. In choosing his material, the writer asked himself the following commonplace question: "If I were to meet this person casually in the street, or in a tram, would he strike me as being in any way abnormal?" This practical, if unscientific, test was applied in every case. Thus many hypoplastic, infantilistic boys, 17, 18 or 19 years old, fell into our group, because they presented the outward appearance of *normal* boys of 14, 15 or 16 years. This principle of selection excluded oligophrenics, such as cretins, mongols, microcephalics, hydrocephalics and others with striking physical (and well-studied) characteristics or gross dysglandular stigmata, such as those associated with pituitary excess or deficiency.

(*d*) Only primary oligophrenics came within the scope of our investigation. Wherever it could be shown that the weak-mindedness was secondary to any post-natal illness or trauma (including birth injury), that case was excluded.

(*e*) Congenital syphilitics and epileptics were excluded, with the following reservation with regard to the latter: Mild epilepsy occurring in the congenitally weak-minded was not considered a ground for exclusion, provided that it was perfectly clear that we

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were dealing with true weak-mindedness as opposed to epileptic dementia.

Within these limits the selection of material was quite free and undetermined. The degree of weak-mindedness was never taken into consideration.

Of the 110 cases examined, 79 were patients at the "Hephata" Institution near Treysa, and 31 were weak-minded boys in the "Fürsorge-Erziehungsheim," Rengshausen, near Kassel.

Method and Technique.

(*a*) Physique-diagnosis: Each patient was measured with callipers and tape-measure and described in accordance with Kretschmer's anthropometric technique, the results being recorded, in every case, in "psychobiogrammatic" form.

(*b*) Intelligence: In the majority of cases the intelligence-age was determined by means of the Binet-Simon intelligence tests.

(*c*) For details as to past history and family history, the anamneses and institutional records and documents were freely placed at the writer's disposal.

(*d*) The method by which the writer assigned each patient to his appropriate temperamental group will be described in a later section of this communication.

Physique.

The findings in regard to physique are given in detail in tabulated form, but the main points may with profit be discussed in the text.

Although no new distinctive physical type emerged from our investigations, the astonishing fact must be recorded that out of our 110 apparently normal individuals, none could be classified as "pure" Kretschmerian physical types, that is to say that in every case the basic habitus was overlaid with greater or lesser dysplastic stigmata of various kinds. In 11 cases the picture was so blurred by the dysplastic elements as to render a physique-diagnosis other than "dysplastic" impossible. In this comparatively small group general hypoplasia is the most prominent dysplastic stigma; 3 are in addition markedly infantile in their development, and the remaining 8 show dysgenital or feminine characteristics in their physical make-up.

The remaining 99 cases, although strictly speaking dysplastic, fitted into the classical Kretschmerian physical groups and

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sub-groups, and are accordingly shown in the table under the headings (and corresponding sub-headings) — leptosomatic, athletic, pyknic. The percentage of pyknic types is slightly under that met with in the general population; the percentage of athletics exceeds the normal ratio. The frequency of feminine and dysgenital stigmata in these cases is, to say the least, very striking. In the physique-diagnoses, dysgenital stigmata of various kinds occur no less than 91 times. An analysis of the various dysplasias is given in Table I. In this table dysgenitalisms and feminisms are shown together, whereas in the more detailed Table II they are distinguished. Perhaps a word of explanation is required on this point: Under the heading "dysgenitalisms," anomalies of hair-growth and of the genital glands and organs are included; feminine curvature of the pelvis and excess of glandular tissue in the breasts are considered as feminisms.

Table I.

The following kinds of dysplasia occurred in the following number of times:

(1) Feminisms and dysgenitalisms	Dysgenital 91		81
(2) Eunuchoid disproportionate height (Eunuchoider hochwuchs)			8
(3) Eunuchoid obesity (Eunuchoider fettwuchs)			2
(4) Dystrophia adiposo-genitalis			1
(5) General hypoplasia			22
(6) Infantilisms			21
(7) Isolated hypoplasias			9
(8) Isolated dysplasias			10
(9) Rachitic stigmata			8
(10) Acromegaloid stigmata			3

Table II.

A. "Pure" physical types, *i.e.*, without dysplasias, 0.

B. Dysplastic types, in which a diagnosis of basic physical habitus was impossible to establish, 11.

(1)	With general hypoplasia and infantilism	3
(2)	,, ,, ,, and dysgenitalisms	1
(3)	,, ,, ,, and feminisms	1
(4)	,, ,, ,, dysgenitalisms and feminisms	1
(5)	,, ,, ,, and rachitic stigmata	1
(6)	,, ,, ,, heterogeneous traits and dysgenitalisms	1
(7)	,, ,, ,, eunuchoid disproportionate height and feminisms	1
(8)	With eunuchoid obesity, feminisms and other isolated dysplasias	1
(9)	With a trace of dystrophia adiposo-genitalis and numerous isolated dysplastic stigmata	1

C. Dysplastic types in which the basic physical habitus was diagnosable, 99.

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I. *Leptosomatics (including compound forms)*, 71.

a. Asthenic-leptosomatics, 13:

(1)	With general hypoplasia and infantilism	2
(2)	,, ,, ,, feminisms and dysgenitalisms	1
(3)	With general hypoplasia and dysgenitalisms	3
(4)	,, dysgenitalisms	1
(5)	,, ,, and infantilisms	1
(6)	,, ,, infantilisms and rachitic stigmata	1
(7)	,, slight feminisms and acromegaloid stigmata	1
(8)	,, eunuchoid disproportionate height, feminisms, isolated dysplastic and rachitic stigmata	1
(9)	,, pronounced dysgenitalisms and hypoplasias	1
(10)	,, isolated dysplasias	1

b. Slender leptosomatics (Leptosom mager), 18:

(1)	With slight dysgenitalisms	8
(2)	,, ,, and general hypoplasia	1
(3)	,, ,, and slight infantilisms	1
(4)	With slight feminisms	2
(5)	,, ,, and isolated dysplasias	1
(6)	With marked feminisms and infantilisms	1
(7)	,, ,, infantilisms, eunuchoid disproportionate height and general hypoplasia	1
(8)	With eunuchoid disproportionate height	1
(9)	,, either dysgenitalisms or delayed puberty	2

c. Powerful leptosomatics (Leptosom kräftig), 24:

(1)	With general hypoplasia and slight pyknic traits	1
(2)	,, ,, slight pyknic traits and feminisms	1
(3)	,, ,, and feminisms	2
(4)	,, ,, infantilisms and dysgenitalisms	1
(5)	With eunuchoid disproportionate height, feminisms and very slight pyknic traits	1
(6)	,, athletic traits, feminisms and dysgenitalisms	1
(7)	,, ,, feminisms, dysgenitalisms and rachitic stigmata	1
(8)	,, slight pyknic traits and hypoplasias	1
(9)	,, ,, dysgenitalisms	4
(10)	,, feminisms	2
(11)	,, slight feminisms	2
(12)	,, hypoplasias	2
(13)	,, ,, and feminisms	1
(14)	,, pyknic traits and feminisms	1
(15)	,, slight dysplasias	1
(16)	,, ,, ,, and hypoplasias	1
(17)	,, ,, ,, and feminisms	1

d. Leptosomatic—slender, powerful, 16:

(1)	With general hypoplasia and dysgenitalisms	2
(2)	,, ,, ,, dysgenitalisms and rachitic stigmata	1
(3)	,, eunuchoid disproportionate height and feminisms	1
(4)	,, marked dysgenitalisms	1
(5)	,, dysgenitalisms	1
(6)	,, ,, and feminisms	1
(7)	,, ,, and athletic traits	1
(8)	,, ,, and infantilisms	1
(9)	,, slight dysgenitalisms	3
(10)	,, either slight dysgenitalisms or delayed puberty and rachitic stigmata	1

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(11) Leptosomatic-pyknic compound form with slight dysgenitalisms . 1
(12) With slight feminisms, infantilisms and hypoplasias . . . 1
(13) ,, isolated dysplasias and hypoplasias 1

II. *Athletics (including compound forms)*, 17.

a. Plump athletics, 10 :

(1) With a suspicion of eunuchoid disproportionate height and feminisms 1
(2) With a suspicion of eunuchoid disproportionate height, feminisms, acromegaloid and rachitic stigmata and hypoplasias . . 1
(3) With feminisms 1
(4) ,, ,, slight pyknic traits and acromegaloid stigmata . 1
(5) ,, dysgenitalisms 4
(6) ,, ,, and slight pyknic traits 2

b. Slender athletics, 6 :

(1) With feminisms 1
(2) ,, ,, dysgenitalisms, and isolated dysplasias . . 1
(3) ,, slight dysgenitalisms 3
(4) Preponderatingly slender athletics with feminisms and rachitic stigmata 1

c. Muscular athletics, 1 :

(1) With slight dysplasias 1

III. *Pyknics (including compound forms)*, 11.

a. Preponderatingly pyknic, 6 :

(1) With general hypoplasia and infantilisms 2
(2) ,, ,, ,, and feminisms . . 1
(3) ,, slight dysgenitalisms 1
(4) ,, ,, ,, and slight athletic traits . . . 1
(5) ,, ,, ,, and infantilisms 1

b. Pyknic-athletic compound forms, 4 :

(1) With eunuchoid obesity 1
(2) ,, ,, ,, and disproportionate height . . . 1
(3) ,, dysgenitalisms 1
(4) ,, ,, and feminisms 1

c. Pyknic-leptosomatic-powerful compound form, 1 :

(1) With dysgenitalisms and infantilisms 1

Additional physical traits, indicative of hypogenitalism, which were almost invariably present but are not shown in the tables, are the quality of the skin and the formation of the growth of the hair of the head. The texture of the skin in the majority of cases is the smooth velvety skin of childhood, poor in papillæ. The frequency with which low growth of hair on the temples occurs, often with a small bridge of hair uniting the eyebrows with the hair of the temples, is also worthy of record. For the benefit of those who pay attention to the stigmata of degeneration emphasized by such earlier writers as Lombroso and Max Nordau,

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tables showing anomalies of the ears, and an analysis of the separate small dysplasias met with, are given in Tables III and IV:

TABLE III.—*Ears.*

	Cases.
(1) Adherent ear-lobes	76
(2) Marked asymmetry of the ears	12
(3) Strikingly small ears	22
(4) ,, simple ear pattern	13
(5) Darwin's tubercle	10

TABLE IV.—*Isolated Dysplasias.*

	Cases.
(1) High arched palate	17
(2) Deformities of the feet	2
(3) Lordosis	2
(4) Facial asymmetry	1
(5) Spina bifida occulta (?)	1

It is perhaps interesting to note that in 76 cases (68·4%) the ear lobes are attached; the ear pattern is abnormally simple in 13 cases; and differences in the size of the ears occur in 12 cases. In 17 cases the palate is abnormally high and arched.

Many writers, including Werner Eisenberg (*Zeitschrift für Kinderforschung*, Bd. xxxv, Heft 2, S. 373–405), who also worked on clinical material at Hephata, have commented on the association of polyglandular dysfunction with oligophrenia. The findings in Eisenberg's and the present investigation are so different as to require some explanation. Eisenberg investigated 498 oligophrenics and discovered 145 cases (29%) of endocrine disturbance. The dysendocrine pictures were classified as follows:

	Dysthyroid.				
	Hypothyroid.	Hyperthyroid.	Dysgenital.	Dyspituitary.	Polyglandular.
Male	33	4	6	1	44
	37				
Female	35	9	1	..	11
	44				

The polyglandular disturbances were sub-classified thus:

	Thyroid and sex-glands.	Thyroid, sex-glands and pituitary.	Thyroid and suprarenal.	Mongolism and dysgenital stigmata.
Male	35	7	1	1
Female	3	7	..	4

The present writer recorded no case of dysthyroidism, 4 cases only of dyspituitarism (a slight case of dystrophia adiposo-genitalis

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which was not evident in the clothed patient, and 3 cases showing acromegaloid stigmata), and 22 cases of generalized hypoplasia which, we suppose, may be regarded as an expression of polyglandular deficiency. These strikingly different findings may possibly be due to the following factors:

(*a*) The quality of the material investigated: Eisenberg included oligophrenics of every grade and kind without any restrictions of sex, age, ætiology or physique.

(*b*) The writer relied upon the ordinary clinical manifestations of dysthyroidism, *i.e.*, cretinoid, myxœdematous or myxœdematoid, as indicating thyroid deficiency, and symptoms of Graves's disease as indicating excess. It is true that in a number of cases the thyroid gland was barely palpable, and in some impalpable, but in the writer's experience this is so frequently found in perfectly normal individuals as to render this rough clinical test (in the absence of strong supporting evidence) valueless as a criterion of thyroid deficiency. (We know, for example, that after almost complete thyroidectomy, a small piece of thyroid tissue in which the parathyroids are imbedded, which is left behind by the surgeon, suffices to supply the thyroid needs of the body.) As far as the writer can ascertain from Eisenberg's paper, he placed some, even if slight, reliance on measurement of the thyroid according to Klinger's scale. Eisenberg, who was primarily concerned with the endocrinological side of his subject, further relied on the biochemical evidence (such as it is) provided by the interferometric method of Hirsch in 30 cases. Of these 30 cases, 17 confirmed his clinical findings, 9 were partially confirmatory, and 4 were not in accordance with the clinical evidence.

These facts, we think, sufficiently explain the apparent discrepancies between Eisenberg's excellent work and the present investigation.

To conclude and summarize this section of the paper, other workers whose material included cretins, mongols, and primary and secondary idiots and imbeciles of both sexes and all ages and degrees of oligophrenia, have established a strong affinity between weak-mindedness and dysfunction of the glands of internal secretion. The writer, working with his peculiarly selected material, was especially struck by the overwhelming frequency with which physical traits indicative of hypofunction of the hormone-producing tissue of the genital glands occurred in his series of cases. As previously stated, the dysplastic stigmata were seldom sufficient to fog the basal physical habitus, which in the great majority of

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cases corresponded with one of the three main Kretschmerian types.

Intelligence and Criminality.

The findings with regard to the degree of weak-mindedness and criminal or strong anti-social traits emerge sufficiently clearly from the tables to preclude the necessity for elaboration in the text. The standards of intelligence here adopted are somewhat arbitrary; they commend themselves in the absence of any orthodox, universally recognized standards of scientific value as being clear and convenient (see Table V).

Table V.

Age according to Binet-Simon (in years).	Terminology.	Figure indicating standard of intelligence.
1–4	Idiocy	1
5–7	Imbecility	2
8–9	Gross mental debility	3
10–12	Moderate mental debility	4
12½–14 and over	Slight mental debility	5

Before attempting to draw any conclusions of a positive or negative nature from our tables, it would be as well to remind ourselves of the quality of the material under investigation. The material consisted of 110 boys over the age of puberty, of "normal" external appearance, suffering from *endogenous* weak-mindedness. The anamnesis showed that in every case they had learned to walk and speak abnormally late, and that they had experienced difficulties in their school years. The material includes only one idiot (according to our own scheme), and his mental age according to Binet-Simon was a trifle over four years. Had the investigation included cretins, mongols, microcephalics and other forms of severely dysglandular low-grade idiots, we might have come to the conclusion—and we think a so partially true conclusion as to be false—that there is a direct connection between the degree of weak-mindedness and bodily dysplasia.

In Table VI the five intelligence groups are arranged in accordance with physical types.

Table VI.

*Intelligence group.	Dysplastic.	Athletic.	Pyknic.	Leptosomatic.	Total.
1	0	0	0	1	1
2	1	4	2	11	18
3	4	1	1	16	22
4	4	6	5	30	45
5	2	6	3	13	24

* Intelligence, see Table V.

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If it is permissible to draw a conclusion from this table, that conclusion is negative, namely, that there is no direct connection between physique and intelligence. This would amply confirm one's casual impression. We can all of us call to mind people of singularly stupid appearance, or of abnormally dysplastic build, with a high order of intelligence. The reverse holds equally true.

TABLE VII.

Intelligence group.	Cyclothyme-cycloid.	Schizothyme-schizoid.	Cyclothyme-cycloid with E.*	Schizothyme-schizoid with E.*	Cyclothyme-schizothyme.	Total.
1	1	0	0	0	0	1
2	5	4	5	4	0	18
3	7	9	2	3	1	22
4	15	15	5	9	1	45
5	7	7	2	7	1	24

* E signifies "with epileptoid components."

Table VII shows the intelligence-groups in relation to temperamental differences. Here again we are led to a negative conclusion, namely, that if we regard intelligence quantitively, there is no law governing the relations between intelligence and temperament. This part of our investigation would tend to support Spearman's thesis, that intelligence is a separate autonomous human faculty.

In Table VIII criminality is shown in the same pairs of relations. This table is presented without comment:

TABLE VIII.—24 *Cases with Criminal Tendencies.*

(*a*) Shown in relation to physique:	
Dysplastics	5
Pyknics	3
Athletics	5
Leptosomatics	15
(*b*) Shown in relation to temperamental differences:	
Cyclothyme-cycloid	8
Schizothyme-schizoid	7
Cyclothyme-cycloid + epileptoid	2
Schizothyme-schizoid + epileptoid	11
Cyclothyme-schizothyme	1

HEREDITY.

Studies in human heredity are always a matter of difficulty, as the necessary information is often impossible, to obtain. In the present instance the family histories were incomplete. In a

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number of cases the boys were illegitimate or foundlings; frequently the parents were not sufficiently intelligent to give, or even purposely concealed, their family history; and where good family trees were available, only the abnormal members of the family were mentioned, thus making it impossible to establish a ratio between them and the normal members. In spite of these difficulties, we were able to collect sufficient evidence of morbid heredity to render this part of our investigation of clinical value, even if it fails to satisfy the academic student of human genetics.

In 18 cases the family history was (within the limits of available information) normal or good. In 17 cases no family history was available. Therefore, a family record was obtainable in 93 out of our total of 110 cases. Among these 93 cases we find a morbid heredity in 74 (80%) cases. Of these 74 cases, the parents were in 69 (93·2%) themselves abnormal. An analysis of these parental abnormalities is given in Table IX:

TABLE IX.

	In the father.	In the mother.	Both parents.
Drunkenness	14	..	1
Oligophrenia	7	17	5
Psychosis (excluding epilepsy)	4	3	1
Psychopathy (including neuroses)	5	7	1
Criminality (including moral and social worthlessness	3	3	2
Syphilis	2	..	..
Tuberculosis	1	4	1

In Table X the morbid heredity of each case and the incidence of abnormalities amongst the brothers and sisters and other family connections is shown concisely.

Amongst the total of the 93 patients whose family history is more or less known, we have a record of no less than 29 oligophrenic siblings.

TABLE X.—*Morbid Heredity and Family Connections.**

I. *Parents* (in 69 cases).

(*1*) Father weak-minded; (2) father psychopathic; (*3*) father manic-depressive psychotic, suicide; (5) mother weak-minded; (7) father criminal; (*8*) mother psychopathic and nervous; (*10*) mother psychopathic; (11) father psychopathic and nervous, drunkard; (*12*) mother manic-depressive psychotic; (*13*) father died,

* The figures in parenthesis are the *serial* numbers of the cases. When these numbers are italicized, it denotes that the particular case occurs in more than one group of this table (*i.e.*, the patient shows multiple morbid heredity or family connections).

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tabes dorsalis; mother psychopathic; (*17*) father and mother weak-minded; (18) father and mother weak-minded; (*19*) father psychopathic, drunkard; (*21*) father and mother weak-minded; (*22*) mother weak-minded, morally and socially worthless; (23) mother weak-minded; (*24*) father and mother weak-minded; (*25*) father psychopathic; (27) father died, tabes dorsalis; (*28*) father psychotic, died in mental hospital, paranoia; (*29*) father and mother psychopathic (father drunkard); (30) father and mother died, tuberculosis; (*31*) mother psychopathic; (32) mother weak-minded; father, gout; (33) mother weak-minded; (*34*) mother psychopathic; (35) mother died, tuberculosis; father psychopathic, drunkard; (*36*) father weak-minded (incest with daughter); mother weak-minded; (*37*) mother psychopathic; (39) father psychopathic, drunkard; mother weak-minded; (40) father psychopathic, drunkard; mother weak-minded; (43) mother psychotic; (44) father weak-minded; mother psychotic, epileptic; (*46*) father psychopathic, drunkard; mother weak-minded; (*47*) father psychopathic, drunkard; mother weak-minded; (*48*) mother, manic-depressive psychotic, died in asylum; (51) father morally and socially worthless; (*53*) father weak-minded; mother died, tuberculosis; (54) mother weak-minded; (*56*) father psychotic, suicide; (*60*) father weak-minded, formerly drunkard; mother first cousin of father; (61) father weak-minded; mother died, tuberculosis; (*62*) father weak-minded; (66) father morally and socially worthless; (67) mother weak-minded, prostitute; (*69*) mother weak-minded; (70) mother died, tuberculosis; (71) father and mother weak-minded; (73) mother psychopathic (reformatory school); (78) father and mother psychotic and nervous; (80) father and mother psychopathic, drunkards; (82) father psychotic and nervous, drunkard; mother weak-minded; (84) father and mother psychopathic (mother prostitute); (85) father psychopathic; mother died, tuberculosis; (87) father psychopathic, violent and brutal drunkard; (*88*) father psychopathic, drunkard; (90) father psychopathic, drunkard; (91) mother weak-minded, prostitute; (*93a*) father psychopathic, drunkard; (94) mother morally and socially worthless; (95) father and mother weak-minded; (96) mother weak-minded; (97) mother weak-minded; (100) father died, tuberculosis; (101) father morally and socially worthless; (*102*) mother psychopathic (belongs to a strict religious sect); (*103* and *104*) father psychotic, drunkard, sexually uncontrolled, delusions of grandeur, in asylum; mother weak-minded; (*105*) mother weak-minded and depressive.

II. *Brothers and sisters* (in 23 cases).

(1) 1 sister weak-minded; (*3*) 1 brother weak-minded; (*10*) 1 brother and 2 sisters psychopathic and highly nervous; (*17*) 1 brother weak-minded; (*21*) 1 sister weak-minded; (*22*) 1 brother weak-minded, cruel, violent, brutal; (*24*) several siblings in reformatory schools; (28) 2 siblings died, "debility"; (*29*) 2 brothers weak-minded; (*30*) 1 sister weak-minded, 1 sister manic-depressive psychotic; (36) 1 sister weak-minded; (*37*) 1 brother weak-minded; (38) 1 brother weak-minded; (*46*) 2 brothers and 1 sister weak-minded; (*47*) 3 siblings weak-minded; (49) 1 brother idiot; (62) 5 siblings weak-minded; (86) 1 brother psychotic, suicide; (88) 2 brothers weak-minded; (*102*) 1 brother in reformatory school; (*103* and *104*) 2 brothers weak-minded; (*106*) 1 brother hydrocephalic.

III. *Other Relations.*

(*a*) Ascendants (in 7 cases):

(*8*) Grandfather psychopathic, drunkard; (*12*) grandmother (mother's side) manic-depressive psychotic; (31) grandfather's sister psychotic; (*34*) grandfather (father's side) psychopathic, drunkard; grandfather (mother's side) uncontrolled gambler; (57) grandfather (mother's side) psychotic, suicide; (60) great-grandfather psychopathic, drunkard; (*69*) grandmother (mother's side) psychotic.

(*b*) Collaterals (in 10 cases):

(*12*) Uncle (father's side) weak-minded; (*13*) uncle (father's side) psychotic epileptic; (*40*) aunt (mother's side) weak-minded; (41) 2 first cousins cripples; mother's aunt weak-minded; (*46*) 1 cousin (mother's side) idiot; (48) 1 aunt (mother's side) psychotic, schizophrenic; (*53*) uncle (father's side) idiot; (56) father's aunt psychotic, died in asylum; (88) 1 first cousin idiot; (*93a*) 1 first cousin (father's side) weak-minded.

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IV. Family history unknown in 17 cases.

V. Family history (more or less) known, and apparently normal or good in 18 cases.

The importance of alcoholism in the parents in relation to oligophrenia in the children is well shown in Table IX. Amongst the 69 abnormal parents we find drunkenness occurring no less than 16 times (23·1%). But whether alcoholism can be regarded as truly ætiological and causal is still undecided; there is always the possibility that the alcoholic parents take to alcoholism because they are mentally abnormal and that the mental abnormality is transmitted. However, in support of the other view, namely that toxic agents such as alcohol can affect the germ-plasm, the evidence is steadily increasing. Much of the recent experimental work on the effect of toxic agents on the germinal elements is critically discussed by Myerson in *The Inheritance of Mental Diseases* (Williams & Wilkins Company, Baltimore, 1925). The clinical evidence also seems to support the thesis that alcohol can injure the germ-plasm, and therefore act as a causative factor in the production of mental defect in (theoretically) endless generations.

As far as the writer was able to ascertain, the sexual instincts of the weak-minded are abnormally weak. Weak-minded females readily capitulate to sexual advances, but this fact does not necessarily imply that such persons possess a strong sexual urge. This is well brought out in Table IX, where we find that the mother was weak-minded in 17 cases, as opposed to 7 cases of weak-mindedness in the father; in only 5 cases were both parents weak-minded. The high incidence of weak-mindedness amongst the parents also emphasizes the alarming way in which the weak-minded (when these people do happen to mate) tend to "breed true." In a recent study on the heredity of imbeciles by A. Lokay ("Ueber die hereditären Beziehungen der Imbezillität," *Zeitschr. f. d. ges. Neur. u. Psych.*, 1929), the writer records the fact that in his series of cases, when both the parents were weak-minded, which only occurred in one case, all the children were weak-minded; when one of the parents was weak-minded, 33% of the children were similarly affected.

Temperament.

An investigation of this kind which left temperament out of account would necessarily be incomplete; but the limitations

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imposed by the quality of the material investigated must be borne in mind from the start. As stated in the introduction to this paper, one of the questions to which we sought an answer at the beginning of our research was: Is it possible to separate the weak-minded into temperamental groups on Kretschmerian lines in the same way as with other sections of the human family; and further, if we can do so, do the same laws of affinity between physique and temperament prevail?

From this point onwards we must leave the firm ground of strict objectivity and empiricism for the realms of controversy and hypothesis. Difficulties immediately arise in correctly interpreting the moods, activities, proclivities and the like in Kretschmerian terms in the case of the weak-minded (*cf.* Birnbaum, *vide* references). For example, temperamental traits which in the normal individual would be regarded as cyclothyme, may in the case of oligophrenics be the expression of (unknown) cerebral trauma, endocrine dysfunction, perverted metabolism and so on; or we may be dealing with as yet imperfectly recognized and undescribed temperamental categories. The present writer has his own views and theories, but they are admittedly controversial, and as yet imperfectly supported. These views will be sketched in outline in a later subsection of this paper.

Method and Procedure.

The criteria of temperament adopted were the elementary criteria as set out in Kretschmer's psychobiogram. The results were obtained by a short psychological exploration of each boy by the writer and by careful questioning of the boys' "Hausvater," who had been in continuous contact with them, in many cases, for long periods of years. Further, each case was separately discussed by the writer with the director of the institution. The verbal questionnaire (put to the "Hausvater") invariably opened with the following question: "Is the boy (or man) on the whole, quiet, silent, uncommunicative, self-sufficient; or, on the other hand, frank, cheerful, companionable?" Then the various temperamental characteristics were inquired into in turn. The following qualities, expressed in adjectives, were regarded as:

(*a*) Cyclothyme-cycloid: frank, companionable, lively, vivacious, animatedly-cheerful, "sunny" and contented, warm-hearted, good natured, affectionate, needing affection, easy-going, dependent,

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naïvely conceited, big-hearted, extroverted, talkative, showing a tendency toward alternating cheerfulness and sadness.

(*b*) Schizothyme-schizoid: quiet, taciturn, self-sufficient, cool-natured, irritable, excitable, nervous, sensitive and "willowy" (Mimosenhaft zart), apathetic, indolent, desultory, moody, unsteady, fidgety, stiff, languid, monosyllabic, self-willed, obstinate, discontented, reserved, reticent, distrustful, shy, misanthropic, resentful, anti-social, introverted.

(*c*) Epileptoid-epileptic: explosive, ill-tempered to the point of violence, liable to severe affective crises, intolerant to alcohol, given to running away as a primitive reaction to circumstances (zu reactivem Weglaufen geneigt), "adhesive" and importunate (klebrig), formal and circumstantial (and, of course, the ordinary clinical features of epilepsy, such as fits, twilight-states, pathologically determined carouses and the like).

Those who are well acquainted with Kretschmer's psychobiogram will notice that many of the temperamental characteristics in the various groups are omitted. The omissions were made purposely, either for the reason that the particular quality was difficult to determine in the case of the weak-minded, or because the concept itself would offer difficulties to the "Hausvater."

For practical convenience, especially in the matter of tabulating, the writer made use of the following numerical symbols in designating temperament. He would like to emphasize that they are symbols only, and have no claim to qualitative mathematical significance. The convenience of this method is shown in Table XI, where the diagnoses of temperament of each separate case (arranged in relation to physique) appears with great economy of space:

+ 1 = Cyclothyme.
+ 2 = Slightly cycloid.
+ 3 = Strongly cycloid.

— 1 = Schizothyme.
— 2 = Slightly schizoid.
— 3 = Strongly schizoid.

± 0 = Cyclothyme-schizothyme (*i.e.*, the two components equally represented).

(1) = Slightly epileptoid.
(2) = Moderately epileptoid.
(3) = Strongly epileptoid (with or without fits).

For example, the following notes appear in relation to one patient: "Taciturn, self-sufficient, self-willed, distrustful, desultory, restless, excitable, apathetic, cool-natured, ungracious, misanthropic, languid,

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TABLE XI.—*Temperament-diagnosis Shown in Relation to Physique.*

	C.	S.	C + E.	S + E.	C − S = ±O.
Dysplastics, 11 cases: 5K.	+1 K +2 K +1 K +3 +2	−3 −3 −2		−2 (2) K −3 (1) K −2 (1)	
	=5 cases, 3 K	= 3 cases		=3 cases, 2 K	
Pyknics, 11 cases: 4K.	+2 K	−3 −3 −2 −1 −3 −3	+3 (1) +3 (2) +3 (2) K		±o
	=1 case, 1 K	=6 cases, 2 K	=3 cases, 1 K		=1 case.
Athletics, 17 cases: 5K.	+3 K +2 K +1 +1 +1	−1 −3	+2 (1) +1 (2) K +3 (1)	−2 (1) −3 (2) −2 (2) K −3 (2) K −3 (3) −3 (1) −3 (2)	
	=5 cases, 2 K	=2 cases	=3 cases, 1 K	=7 cases, 2 K	
Leptosomatics, 71 cases: 15K.	+1 +2 K +2 H +3 +1 K +1 H +1 +1 +2 +3 +2 +2 +3 +2 +2 +1 +1 +1 +2 +1 +1 +1 +2 +2	−3K −1 −1 −3 −2 H −1 K −1 −1 −3 K −3 K −3 K −3 −2 −1 −3 −1 −3 −2 −3 −1 −2 −3 −3 −3	+3 (2) +1 (1) +1 (1) +1 (1) +1 (1) +1 (1) +2 (1) +2 (1)	−3 (2) K −3 (2) K −3 (3) K −3 (1) K −3 (2) −2 (3 K −3 (1) K −2 (1) −1 (3) −2 (2) −3 (1) −1 (1) −3 (1) K	±o K ±o
	=24 cases, 2 K	=24 cases, 5 K	=8 cases	=13 cases, 7 K	=2 cases, 1 K

K = Criminal; H = hysterical components.

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'slow,'" he was diagnosed as strongly schizoid and appears in the table with the symbol "– 3." As another example, Erich B— is "companionable, cheerful, lively, friendly, 'sunny,' and 'contented,' with a keen sense of humour, showing a tendency to alternating cheerfulness and sadness, uncontrolled, uninhibited, 'work-shy,' moody, excitable, periodically ill-tempered to the point of violence, 'cheeky,' self-indulgent, boastful, liar, thief." The diagnosis is "strongly cycloid with moderate epileptoid components," or reduced to symbols, "+ 3(2)." Here is an example of a 34-year-old cyclothyme, + 1, with an intelligence-age of 7 years (imbecile): "'sunny,' cheerful, talkative, industrious, companionable, frank, dependent, trusting, contented, even-tempered, phlegmatic." Here is another case of an 18-year-old boy with an intelligence-age of 14½ years, in whom the cyclothyme and schizothyme components practically balanced: ± 0: "lively, companionable, contented, 'difficult,' somewhat deceitful, nervous, excitable, haughty, vain, 'grouser,' sexual impulse (normally orientated) strong."

Findings: Table XI shows the 110 cases arranged according to main temperamental groups (C = cyclothyme-cycloid, S = schizothyme-schizoid, C + E = cyclothyme-cycloid + epileptoid, S + E = schizothyme-schizoid + epileptoid, C – S = cyclothyme – schizothyme) and physical habitus. (It must not be forgotten that all the cases that are designated pyknic, athletic or leptosomatic are more or less dysplastic.)

Table XII contains a general abstract of the previous table:

TABLE XII.

	Dysplastics.	Pyknics.	Athletics.	Leptosomatics.	Total.
Cyclothyme-cycloid	5	1	5	24	35 (31·5%)
Schizothyme-schizoid	3	6	2	24	35 (31·5%)
Cyclothyme-cycloid + epileptoid	0	4	3	8	15 (13·6%)
Schizothyme-schizoid + epileptoid	3	0	7	13	23 (20·7%)
Cyclothyme-schizothyme	0	1	0	2	3 (2·7%)

The figures contained in this table will come as a surprise to those who are familiar with the physical-temperamental affinities generally obtaining. In spite of the small pyknic material, cases (31.8%) fell into the cyclothyme-cycloid group, and exactly the same number into the schizothyme-schizoid group. And further, each

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of these temperamental groups contains the same number—24—of persons of leptosomatic habitus. Curiously enough, only one pyknic fell into the cyclothyme-cycloid group as opposed to 6 who fell into the schizothyme-schizoid group (although they are better represented, with 4 cases, in the cyclothyme-cycloid + epileptoid group). These affinity ratios cannot be passed over without discussion and some attempt at explanation. We will briefly discuss some possible explanations of these anomalous findings. The first possible supposition is that Kretschmer's teaching is incorrect. As opposed to this we have the fact that the affinities obtaining between physique and temperament have been more than amply confirmed by other workers in the same field.

Another possible explanation is that we are mistaken in describing the individuals whom we assigned to the cyclothyme-cycloid group by these terms, in spite of their many admittedly cyclothyme-cycloid qualities. Perhaps many of the weak-minded, who do not fall into the schizothyme-schizoid group, possess a special kind of temperament, which one might call the dysendocrine or dysglandular temperament in order to stress its physical determinants. Thus, the fat, sleepy, good-tempered, rather stupid boy with a tendency to dystrophia adiposo-genitalis or possibly eunuchoid obesity, a type known to all of us, is not really cyclothyme, but possessed of the above hypothecated dysglandular temperament. The writer rejects the hypothesis that accidental anomalies, such as endocrine dyscrasia, are associated with their own specific kind of temperament; he believes that they merely blur, colour or modify an underlying basal temperament, rather in the same way as the basal temperament may be strongly overlaid with epileptoid components, which are probably equally adventitious. Universal temperamental types of the kind postulated by Kretschmer must, in the writer's opinion, be rooted in phylogenesis and not merely rest on shallow ontogenetic foundations.

How are we, then, to explain the anomalies in the affinities between physique and temperament met with in the course of our investigation?

We incline to the view that in the majority of our cases there is inhibition of temperamental development, parallel to the intellectual and bodily stunting already described. It seems likely to us that the cases which up till now (in this paper) have been described as cyclothyme-cycloid were wrongly so designated, and that they belong to an (up to the present) unrecognized and undescribed temperamental category. We shall attempt to describe

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the nature and genesis of this category with the help of an hypothesis in terms of phylogenesis. The theory is here presented in the sketchiest outline: the writer hopes to be able to elaborate it and combine with it a theory of the endogenous psychoses in a later communication.

The Genesis of the Temperaments.

A plausible interpretation of the genesis of the temperaments follows from the well-supported view that *consciousness*, regarded as a human faculty, itself underwent a process of evolution in the history of the race.

A valuable attempt to solve the problem of the evolution of consciousness is to be found in a recently published work, *The Ascent of Humanity*, by Gerald Heard (Jonathan Cape, London, 1929). In this work Heard scientifically elaborates a new philosophy of history, which provides an attractive and satisfying interpretation of the growth and decline of civilization. Heard interprets human progress in terms of psychology; man progresses *pari passu* with the evolution of consciousness. The first stage of consciousness was at what may be called the *co-conscious* level. Man at this primitive level was an undifferentiated member of the herd, incapable of the conception of his own individuality. This may be regarded as a golden age, if one likes to consider the apiary or the nest of termites as ideal communities. From the undifferentiated mass a new psychism evolves—men with a sense of their own individuality appear. These men, *proto-individuals*, oppressed with a sense of their isolation, soon learn to exploit their new conscious faculty and become the tribal leaders and conquerors of the primitive world—the heroic age has dawned. "Art, literature, ritual, all go back to pre-individual conditions. They have all been changed, but they do not change as fast as the psyche. We can then say that we have an outline of the evolution of consciousness. From complete co-consciousness (nowhere now) it rises to collective representationalism (still existing in backward communities), and consciousness still exists in the masses to-day in a state of partial individualism, a third, a last stage immediately prior to self-consciousness; of this stage we all have a memory if we recall childhood. Child psychology is therefore the final evidence of the evolution of consciousness, because what takes place in the growth of each one of us has to some extent happened in the growth of the race. New

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knowledge of the prehistoric period of our race suggests our real evolution."

The next stage in the history of the race is one of the disintegration of consciousness, and shows the disintegrating progress continuing to work down and spread among the masses to turn them into private individuals. We will not mention any of the intermediate stages, but pass on to the final phase in the evolution of consciousness which is now in progress, namely, the re-acquisition by fully individualized persons of a corporate sense; this fusion of *neo-co-consciousness* with *neo-individualism* is termed by Heard *super-consciousness*. Evidence of the dawn of super-consciousness is everywhere apparent to-day, but nowhere is it extant in its completeness.

The relevance of this brief summary of Heard's main arguments will now, we hope, become apparent.

Although it is possible in some children to detect schizothyme or schizoid traits at a very early age, most young children, in the writer's opinion, present an undifferentiated kind of temperament which is superficially cyclothyme. Although by no means identical with co-consciousness, we suggest that this undifferentiated level of temperament corresponds ontogenetically with the co-conscious phylogenetic phase. We therefore have an undifferentiated phase which is outwardly cyclothyme, but is actually somewhat different from the cyclothyme temperament as represented in the more differentiated individual. The next stage ontogenetically is one of differentiation. The child may develop on *neo-individualistic* lines and become what we understand to-day as a schizothyme, or on *proto-individualistic* lines and show schizoid characteristics. The fully developed type of cyclothyme, in the writer's opinion, is the man who has developed the rudiments of superconsciousness, and is therefore an individual who feels himself to be part of, and therefore in harmony with, his human environment. It is likely that the cycloid is one who has retained so much of the spirit of the herd in his psychic make-up that at times he actually feels himself out of harmony with the herd, which at this stage of evolution has become (for him) over-individualized; hence the fluctuations in the sphere of his affectivity.

We are now in a position to offer an explanation as to why an excessive proportion of our series of oligophrenics presented apparently cyclothyme or cycloid temperamental characteristics with anomalous physical habitus. We suggest that these people are not cyclothyme-cycloid in the sense in which these terms can

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be applied to fully differentiated members of the human race, *but that they have been fixated at the undifferentiated level.* They present in the fullest sense the picture of psychic, as well as intellectual (and in many cases physical) stunting. Perhaps one might apply the terms *proto-cyclothyme* and *proto-cycloid* to persons exhibiting this pre-differentiated form of temperament. Proto-cyclothymic temperaments are also found in adults of primitive races, and even amongst the less differentiated peasant populations of more advanced countries. For this reason we speak of such people as being childish, meaning thereby that with children they share the cyclothyme (*proto-cyclothyme !*) qualities of uncritical friendliness, affectionateness, quickness of temper, dependence on others, suggestibility, generosity, easy-going, distractibility, the tendency to attach importance to externals and appearances, readiness to laugh and cry on trivial stimuli, the pleasure taken in over-eating, display and the like.

We cannot postulate the existence of a corresponding proto-schizothyme or proto-schizoid make-up for the reason that the schizothyme-schizoid category of temperament presupposes differentiation, which corresponds to the appearance of individuality in phylogenesis, although the schizoid psychopath possesses qualities common to the *proto-individual* as described in Heard's book.

To conclude this discussion on the oligophrenic temperament, we suggest that a large proportion of the weak-minded belong to the *proto-cyclothyme-cycloid* temperament category, and that this form of temperament corresponds to a phase in the evolution of consciousness passed through by our remote ancestors.

Summary.

(1) 110 cases of endogenous oligophrenia in males over the age of puberty, and presenting on casual inspection a normal physical exterior, were examined.

(2) Anthropometry and somatoscopy, carried out in accordance with the principles laid down in Kretschmer's *Körperbau und Charakter*, and *Medizinische Psychologie*, showed that in 100% of these cases the basal physical habitus was complicated by lesser or greater degrees of dysplasia. The most prominent dysplastic stigmata were of a dysgenital nature.

(3) The degree of intellectual defect in each case was evaluated and tabulated against (*a*) physique and (*b*) temperament. The

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results suggest that there is no correlation between intelligence and either of these two factors.

(4) An investigation into the family histories of our cases reveals the extreme frequency of morbid inheritance in oligophrenia. The existence of defects of various kinds in the parents is so striking that it seems likely that such defects are to be reckoned amongst the determinant or causal factors in the genesis of oligophrenia.

(5) Each patient was assigned to a temperamental group. The results showed that the ordinary physique-temperament ratio does not apply in these cases, temperaments which are apparently cyclothyme-cycloid appearing in excess in persons with anomalous physique.

(6) In order to explain the above-mentioned anomaly (***vide supra*** No. 5), a phylogenetic theory of the genesis of temperament is tentatively offered in outline. According to this hypothesis, the patients presenting apparently cyclothyme or cycloid temperaments are in reality fixated at an undifferentiated psychic level, which is normal in babies, in very young children, and in adults of backward races. These temperamental categories would possibly be better designated as *proto-cyclothyme* and *proto-cycloid*.

(7) If we accept this classification, Table XII should read as follows (Table XIII); and the other tables in which temperament figures should be accordingly modified.

TABLE XIII.

31·5%	Proto-cyclothyme-cycloid.
31·5%	Schizothyme-schizoid.
13·6%	Proto-cyclothyme-cycloid with epileptoid components.
20·7%	Schizothyme-schizoid with epileptoid components.
2·7%	Cyclothyme-schizothyme.
100%	

CONCLUDING REMARKS.

In conclusion, the writer would like to express his deep sense of gratitude to various people whose assistance has proved invaluable. Firstly he would like to thank Prof. Dr. Kretschmer for his personal instruction in his own brilliant and stimulating psychiatric teaching, and for his advice and encouragement throughout this piece of research. It is only fair to Prof. Kretschmer to point out here that he is in no way responsible for the purely speculative part of this paper. Secondly, the writer desires to thank Dr. Wittneben,

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Medical Superintendent of the Anstalt "Hephata," for allowing him to investigate his patients, for giving him access to all the relevant documents and for placing his special knowledge at his disposal. Thanks are also due to Herr Lindtner, Director of the Fürsorge-Erziehungsheim, Rengshausen, for similar kindly offices.

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Medico-Legal Notes.

REX *v.* DANIEL BERNARD CROWE.

This case was tried at Gladstone, South Australia, before Mr. Justice Napier and a jury, on November 14 and 15, 1929.

On the morning of August 27, 1929, a woman was found lying dead in bed at her home with a bullet-wound in the head. The accused, her husband, a man of forty, was found wandering outside the house suffering from the effects of poisoning. Evidence was brought by the Crown that he had been jealous of his wife's friendship with another man. Some time before the tragedy he had gone to the lodging-house where the man was staying, and had complained to the proprietress that his wife was keeping too late hours. On one occasion he had said, "If I see her here again there will be shots fired." In answer to questions by counsel for the defence, a witness said that sometimes the accused looked strange and would suddenly stop and stare; deceased woman's behaviour was entirely above suspicion. The husband of the proprietress of the lodging-house said that on the day before the tragedy he had walked with Crowe to the golf links. Crowe walked up to Mrs. Crowe, who was playing golf, and took a club away from her. Witness and accused then walked home and the latter said, "I will break her head with this," and "I saw —— run away from our door when I returned the other night and my wife made a rush to get into bed." Witness saw Crowe on the evening before the tragedy, and also at an hotel next morning. They had two or three drinks together, and Crowe showed signs of being under the influence of liquor. The constable came for him while the witness was with him. Evidence was also given that the accused was moody and reserved, and that since the death of a son by accident some years previously he had become emotional and a very changed man. A railway employee said that on the morning of the tragedy Crowe had asked him about lysol. He told Crowe that there was lysol in the ambulance box, and later he found the box broken open and the lysol missing. The fifteen-year-old daughter of the accused

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corroborated the evidence concerning the incident on the golf course, and said that in the early hours of August 27 she woke up and heard a noise of something falling on the floor. She then saw her father rush down the passage and heard him say, "Now, that's done." Her father took a bottle of beer from a cupboard. Witness went off to sleep again and was awakened some hours later by her sister, who told her about her mother. A constable gave evidence that just after one of the children had come to him with the news of the tragedy, he saw Crowe in the company of a previous witness. He called to Crowe, but the latter hurried away. He went to Crowe's house and saw the dead woman. He then went in search of the accused and saw him stagger and fall, not far from his home; he was unconscious and his breath smelled strongly of lysol. A little later witness was given a letter which the accused had handed to another witness. This letter, of some five hundred words, addressed to the constable, was full of references to the supposed infidelity of the murdered woman, with directions that various insurances and other property should be left to his children. The letter concluded: "This business with —— (the lodger) has got me down properly . . . And don't forget to blow Mrs. ——'s (the proprietress of the lodging-house) lights out the same as I did my wife's." Just after his arrest the accused said he did not remember having written the letter or anything about his wife's death.

A defence of insanity was advanced and evidence was called that the accused was epileptic. Two uncles had committed suicide. The accused said that he had had fits for a number of years, and sometimes carried out actions unconsciously. On one occasion he was driving a pair of horses and later found himself lying down beside them. They had been unharnessed and had their nosebags on. He admitted having suspected his wife for some months, but said that he was now convinced of his mistake. He said, "On the night of August 26 I had an argument with my wife in the bedroom, when I accused her of giving —— money. I was boiling with rage. From that time until I woke up in hospital my mind was a complete blank. I never had any intention to take the life of my wife, and have no memory of doing so." His brother gave evidence that he was subject to fits several times a year and had undergone medical treatment.

Dr. Harry Downey, Medical Superintendent of Parkside Mental Hospital, expressed his opinion that the accused was epileptic, and that at the time of his examination, a few days before the trial,

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he was free from delusions and hallucinations. He had not only major attacks, but also attacks of fainting and weakness, sometimes preceded by a blinking of the eyes. He had bitten his tongue during a fit. The accused remembered the quarrel with his wife up to a certain point, when there occurred a blank. That would fit in with the theory that a fit began at that moment. He would be no more responsible than a man walking in his sleep. In the witness's opinion the accused knew what he was doing, but did not know at the time that it was morally wrong. In this state he would think that he had a moral right to kill his wife, but he would know at the same time that he was legally wrong. The witness pointed out that in a previous automatism the accused had unharnessed his horses and fitted the nosebags, indicating that he knew the nature and quality of his actions at that time, although he did not realize until he came out of the automatism that his actions had been unnecessary and foolish. The following question was put to the witness: "Supposing some months before the death of the deceased in this case the accused had developed suspicions of his wife's fidelity, and those suspicions became more and more pronounced until the day before her death he threatened her and stated his intention of killing her with a golf stick, and also his intention of shooting in the way —— (a witness) described, and early the next morning he did in fact shoot his wife, would that affect your opinion as to there being a reasonable possibility of this being an act performed in a post-epileptic state?" Dr. Downey expressed the opinion that such a state of affairs would be exceptional for a post-epileptic automatism. He was then asked, "Supposing the accused, thaving hreatened the night before to kill his wife, did kill her in the morning, then wrote a letter in which he admitted having killed her, waited for a favourable opportunity to obtain lysol and then took lysol, would those things tend to suggest that he was carrying out a purposeful train of action; that is, a train of action purposeful, whether it originated before or in the state of epilepsy?" Dr. Downey replied that it would not be unusual if the plan was thought out during the epileptic condition, but that it would be unusual if the plan was thought out before the epileptic condition.

In summing up, the Judge pointed out that the defence asked the jury to acquit the accused on the grounds that when the act was done it was done without any appreciation of its nature and quality, or, if there was any such appreciation, then that the accused did not realize that he was doing wrong. It was not

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denied by the Crown Prosecutor that the accused was subject to epilepsy. As regards epileptic states, the Judge said that automatism implied a course of action without the direction of any conscious will or intention. If that were established in the case of the accused, then he would legally be regarded as having been insane at the time he committed the crime. But epileptics might also manifest a subsidiary or dual personality, in which case it would be necessary to ask, " Did the accused know that his act was wrong in law? " If the subject realized that he was committing murder in killing his wife, then he was responsible in law, however much his personality might have been dislocated. The jury must decide whether they agreed with Dr. Downey in accepting the symptoms related to the latter as true. In regard to the earlier phases of automatism, the jury should note that they probably did not cover a period of many hours, whereas in the present case the alleged duration was some nine or ten hours. In His Honour's words, " That is a long time, hardly paralleled by the seizures spoken of as earlier occasions. It would be easier to believe that the act was done during a seizure and that the subsequent acts were done in a state of remorse or despair." The Judge went on to say that it might be difficult to believe that the accused did not remember writing the letter, or indeed that he would have written while he was in an unconscious state. After writing the letter he probably lapsed into unconsciousness from the effects of poison. The accused had said that he did not remember shooting his wife. If that were so Dr. Downey maintained that the act was done in a state of post-epileptic automatism. It was for the jury to decide how far they believed the accused when he said that he did not remember. If the jury could dismiss all reasonable doubt that the accused had done the act, had he, from disease of mind, not known the nature and quality of the act, or had he not known that what he was doing was wrong?

The jury failed to agree. A month after the trial Crowe was certified as insane and sent to the Hospital for Criminal Defectives. In hospital he had periods of a few days during which he was dull, depressed, and apparently taking no interest in his surroundings. On one occasion he had a " twinkling of the eyes," after which he felt weak and ill. The medical officer who observed the attack considered this as a manifestation of *petit mal*. After several months of treatment the man has recently been reported to be bright and mentally clear and free from attacks.

I wish to express my indebtedness to Dr. M. H. Downey for

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placing at my disposal various documents from which this report was compiled, and for permission to publish his evidence.

W. S. DAWSON.

REX *v.* HETTY JOHNS.

This case was tried at the Central Criminal Court on September 11, before Mr. Justice Finlay. The accused, æt. 16, was charged with arson, and surrendered to her bail. She had been employed as a domestic servant at a house in Regent's Park from December 24 to 31, 1929. During this short period no less than four fires occurred in the house. In May of the present year she was engaged as a domestic servant at a flat in Marylebone. Early in the morning of May 23 she came into her employer's bedroom, and announced that there had been burglars in the flat. She also said, "It is all smoke in the sitting-room." The sitting-room was found to be on fire.

The jury found the prisoner "Guilty" on all the counts, but strongly recommended her to mercy as, in their opinion, she did not realize the seriousness of what she was doing.

The judge said that investigation of the accused's mental condition should certainly be undertaken; and he sentenced her to nine months' imprisonment in the second division, as this would give an opportunity for medical examination to be made.

The result of this trial furnishes an illustration of the disadvantage of giving bail in cases of this kind. Fire-raising is an offence which should always occasion suspicion as to the mentality of the accused person, and adequate medical investigation should always be made before the trial. Prison may not be the ideal place for such examination. But it is at least better that examination should be made in prison than that there should have been no examination at all, as, to judge from the published report, happened in this case.

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Occasional Notes.

INFECTIOUS DISEASES IN MENTAL HOSPITALS: REPORT BY SUB-COMMITTEE ON CARRIERS IN RESPECT OF ENTERIC, DYSENTERY AND DIPHTHERIA.*

THIS report is based upon the answers to a questionnaire on the subject recently circulated to mental hospitals. Seventy-three hospitals returned replies; 39 returned negative answers, 2 with a remote history of carriers; thirty-four record the presence of carriers, including in one or two instances carriers recently deceased.

In summarizing the results, the returns have been divided into these two sections, as in many instances, where negative returns were made, the other answers regarding treatment, etc., were left blank as being not applicable. Those returning carriers answered all questions.

Negative Returns.

Of the 39 negative returns, 19 definitely deny that carriers exist in their hospitals, 20 merely state, "none are known." In 5 instances the absence of such disease is specifically stated, while in 15 cases the presence of disease is implied or mentioned, namely four cases of enteric fever, four cases of dysentery and one of diphtheria, and six cases where the disease is not specified.

Treatment.—In 24 instances no answer regarding treatment is given. In six cases T.A.B. vaccine was used. In five cases isolation is practised and these two methods combined with antiseptics are also used. Vaccine and serum treatment is stated to be used in two hospitals infected with dysentery.

Methods of investigation.—In 9 of the 39 returns the use of bacteriological methods is referred to.

Hospitals Recording Carriers.

Twenty-eight hospitals record carriers and six more suspected carriers. One hospital records carriers of enteric, dysentery and diphtheria. Ten hospitals record carriers of both enteric and

* Approved by the Research and Clinical Committee for publication.

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dysentery and three merely suspect the same. In three cases the type of carrier is not specifically stated. Twelve hospitals record enteric carriers and three more suspect such carriers. The infection in one proved and one suspected case was paratyphoid B. Forty-eight enteric carriers are specified. Five more institutions merely state they have carriers; one case of these is paratyphoid B. Six other hospitals suspected enteric carriers.

Dysentery.—Three hospitals record dysentery carriers. This is in addition to the ten hospitals who record enteric and dysentery carriers and three further hospitals who suspect such cases. Twenty-four carriers are specifically recorded, and four hospitals simply record dysentery carriers.

Diphtheria.—Four hospitals indicate diphtheria infection, two hospitals record three carriers—one active and one quiescent and one lately deceased.

Methods of investigation.—In all but two instances reference is made to complete bacteriological investigation in the hospitals recording carriers. In the two instances among those merely suspecting carriers is the lack of bacteriological investigation implied.

Treatment.—(*a*) Enteric: Segregation is advocated for nearly all cases, in combination with other methods. In five hospitals detection of the carrier and segregation alone are relied upon. Seventeen of the twenty-eight hospitals having or suspecting enteric carriers use T.A.B. vaccine. This is given variously to the carriers, or to suspects or to all resident. In only one case is the cure of a carrier by vaccine recorded, and three hospitals specifically state that vaccines fail to cure this condition.

One notable result of prophylactic inoculation is recorded in a hospital where enteric is stated to be endemic and where a complete bacteriological review is considered impracticable—namely, that the mortality has been reduced from 28% to 0%.

Three hospitals record cholecystectomy and one hospital cholecystotomy, and two are considering the question of operation. Eight cases of cholecystectomy are recorded at North Riding Mental Hospital; five of the patients were cured, one improved, one not improved and one died.

(*b*) Dysentery: Vaccines and serum are recommended for the treatment of dysentery. In three cases vaccines are particularly recommended, and one observer, Dr. Menzies, records that serum is of little value, but another worker is trying serum where the vaccine has failed. Reference is made by two observers to the difficulty in diagnosing Flexner dysentery by serological methods,

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but one hospital states they diagnose their carriers by this very doubtful method.

Segregation is referred to in most reports, and intestinal antiseptics are suggested in a few instances.

(*c*) Diphtheria: Of the three cases of diphtheria carriers, one died, one was isolated, and a third improved after a sinus infection had been remedied.

General.

Enteric carriers seem to have received most attention, probably owing to the more fatal results of infection and need for greater care in detection.

It is notable that cholecystectomy seems to hold the best hope of a cure.

A. A. W. PETRIE,
Reporter.

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Part II.—Reviews.

Possession, Demoniacal and other, among Primitive Races in Antiquity, the Middle Ages and Modern Times. By T. K. Oesterreich, Professor at the University of Tübingen. (Translated by D. Ibberson, M.A.Oxon.) London: Kegan Paul, Trench, Trübner & Co., Ltd., 1930. Medium 8vo. Pp. xii + 400. Price 21*s*.

It is difficult for us nowadays to realize the mental atmosphere in which people lived when such beliefs as demoniacal possession, in Satan going up and down like a raging lion, in vampires and the like were ever present to them, and when disbelief, if explicit, was apt to be followed by more unpleasant consequences than even the believers experienced! Still, we may, more or less, "recapture the first fine careless rapture" by considering the present attitude to possession among primitive races, among the more credulous and ignorant individuals in civilized communities, and among the insane.

Much has been written on "possession," but a good deal of it only incidentally; so that there is room for such a comprehensive and scholarly study as the one Prof. Oesterreich has given us. It is likely to be a standard work on the subject because of the illustrative material which he has collated; but it is rendered more valuable from the scientific point of view because he has dealt with that material critically. For the most part it has been accepted that the phenomena were supernatural—or at least extra-natural. While this was so, there was little likelihood of any attempt to discover the psychological, or physiological, basis of this curious state. This was, of course, inevitable among savage races, and even among semi-civilized people; but that such beliefs should have persisted alongside a relatively high degree of culture is more surprising. If is, of course, more common the lower the general intellectual level is. "Only where a high degree of civilization prevails does it disappear or retreat into the shadows." It is not possible for such beliefs to persist when people reach the stage of being able—or of being permitted—to apply common-sense to the investigation of phenomena which have been, to so great an extent, in the strictly guarded territory of the theologian.

The belief in possession is bound up with, or is dependent upon, belief in a soul: the "first and most striking characteristic is that the patient's organism appears to be invaded by a new personality; it is governed by a strange soul." In earlier times the possessing influence was considered to be a demon; but as belief in the Devil

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or in demons waned, "more and more it is the spirits of the dead who speak in the possessed." But while this belief in demon possession lasted, what immense harm it did! Not so much to the person possessed—though that was unpleasant enough—but rather to those who were sufficiently unfortunate to be accused of causing, or of being party to, the possession. What pitiable and often dangerous nonsense the absurd theory of possession may prove to be! The history of witchcraft makes this abundantly clear. The accounts which are given in the case of the unfortunate priest, Urban Grandier, who was tortured and executed at Loudoun, in 1634, form an object-lesson in this respect. In this as in many of the cases, the sexual element is important, if not predominant. The female being emotionally unstable and suggestible, more commonly exhibits the phenomena of possession. If one may, rashly perhaps, hazard the suggestion, it is so even now!

Speaking of the subjective state of the possessed, Oesterreich says, "The true state of things is essentially the same as when I converse mentally with someone, and in imagination hear him reply, by which means a conversation may be enacted. In these circumstances the arguments of the other person may also have a character of compulsion. In the case of possession there is nothing more than an extraordinary accentuation of this phenomenon. Instead of the discussion being purely and simply a figment of the imagination, there is simultaneous compulsive excitement of the vocal organs and eventually yet other actions of a compulsive nature. But there is no essentially new phenomenon; we are dealing throughout and always with parasitic psychic obsessions." There is, therefore, an exaggeration or perversion of ordinary processes, not something extraneous or new.

While an unstable, neurotic element is necessary in order that any individual may exhibit the symptoms of possession and undergo the process of auto-suggestion, the effect of the environment and of suggestions from without is also important. When environment, including public opinion, alters and scepticism is dominant, possession diminishes or disappears. "Thanks to Semler, Schleiermacher and David Friedrich Strauss, belief in possession has in the Protestant world received its death-blow even if it is not completely dead." On the other hand, "the demonological theory of primitive Christian times is immutably perpetuated by the Catholic Church," but even there the leaven of rational thought is working, for "writings on practical theology show a unanimous tendency to warn the reader that possession should not be too readily admitted."

It is, however, in spiritualistic circles that the belief is still so widely maintained; for spiritualism constitutes "in the great civilized countries the sphere in which states of possession are still freely manifested." It is the conditions known as trances which are "nearly related to possession"; and it is by these states that "the modern world joins hands with that of primitive religion." The characteristic features of primitive religion are credulity and superstition!

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I hope I have made it clear that this is a valuable and interesting volume. The translation appears to have been extremely well done. A few slips have occurred, however, in proof-reading. For example, nearly three lines are repeated on p. 106, "distorsions" occurs on p. 34, "anology" on p. 252—small blemishes in an otherwise well-produced book. H. J. NORMAN.

Sleep: Why We Need it and How to Get it. By DONALD A. LAIRD, Ph.D., Sc.D., and CHARLES G. MULLER. London: Williams & Norgate, Ltd., 1930. Crown 8vo. Pp. x + 212. Illustrated. Price 6*s*.

This book is a popular exposition and not a scientific treatise. It is written in the style of an American magazine article, and it is a little difficult owing to the rhetoric to come upon the findings the authors have themselves made in their researches, which have been extensive and thorough. We get glimpses of the elaborate methods employed in their work—squads of co-operating young men and an abundance of instruments.

The chief point of interest to the serious student of the subject is that the authors claim to have demonstrated a rise in the metabolic rate above the basal line in the early hours of sleep. This is important, as it supplies the long-lacking direct experimental proof of the restorative function of sleep.

Another set of experiments demonstrated a falling off in accuracy in mental work as the result of a loss of sleep, while output was but little interfered with—a point of which it has been found extremely difficult by previous workers to obtain direct proof. The authors also claim that previous loss of sleep produces a similar effect to that caused, according to Laird's experiments, by working intensively while disturbed by noise. But the experimental results hardly substantiate the alarmist preliminary chapters, in which they explain how harmful the loss of sleep can be. One would like, for example, to hear the evidence for their statements about the severe and *permanent* results of loss of sleep during the war.

The question of comfortable sleep has been gone into with painstaking detail, and we are told exactly what mattress to use and in what colours the bedroom should be furnished.

The authors have done their best to make the book attractive, and have to a considerable extent succeeded, partly by the ignoble device of relegating some of the experimental facts to an appendix.

To English readers there are certain oddities in the style of writing which rather spoil the pleasure of reading. To begin a sentence with "Too," an adverbial conjunction, is an absurd and awkward barbarism, but they appear to be fond of it.

R. D. GILLESPIE.

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Social Control of Sex Expression. By GEOFFREY MAY. London: George Allen & Unwin, Ltd., 1930. Pp. xii + 248. Price 12*s.* 6*d.* net.

This book deals with the control exercised by Anglo-American law over the voluntary expression of the sex instinct. It is often supposed that the savage is free from the trammels of sex repression. This idea is quite erroneous, although the restraints may not be similar to those in force in civilized communities. The majority of savage races regard ante-nuptial chastity as an ideal, and make some attempt to enforce it; for illicit sex relations are considered to be deleterious to the community, as well as to the individuals directly concerned.

Our present sex restraints can be traced back to the views held by the ancient Hebrews. The restraints enjoined by that nation rested upon a property basis and a contamination basis. But there was also what may be termed a heresy basis. The intense monotheism of the Hebrew race made intimate contact with the followers of other gods to appear as an injury to Jahveh, and such intimacy was closest in sex union. The Hebraic abhorrence of homosexuality was largely due to the fact that such practices were indulged in by the adherents of an idolatrous cult.

In later Hebrew history a decadence in moral practice occurred, and this was accompanied by a tightening of moral precept. Hebraic sects arose which preached a doctrine of asceticism. Hebraism came into contact with many foreign religions, practised in the Roman Empire, and containing a marked element of dualism. Out of the welter thus created Christian asceticism was born, with its insistence upon the antithesis of the moral and the physical, and sex became connected with the doctrine of the fall of man. The Christian scheme of sex morality was introduced into Saxon England, where there existed no organized body of temporal law to mark out the bounds of spiritual jurisdiction; the secular and the ecclesiastical courts were hardly separated.

The separation of temporal and ecclesiastical jurisdiction slowly germinated from the time of the Norman Conquest, and a dual organization came into existence. The Reformation did not succeed in freeing family and sex affairs from the ecclesiastical courts, and the apex of the dual organization was the high Commission instituted by Elizabeth. This latter court became ever more unpopular, and was abolished in 1640. Upon its ruins the Puritans attempted to erect a new structure, but with no permanent success. So far as this country is concerned, ecclesiastical jurisdiction in sex matters has ceased. Into the legal gap thus created the temporal law has taken but few steps. The latest of these is the civil punishment of incest, which became a criminal offence as lately as 1908.

The Puritan tradition was carried across the Atlantic, and drastic interference with sex expression was attempted by the early New England colonies. In many respects these laws have passed into the limbo of forgotten things. But the Puritan tradition, as

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regards legislative interference with voluntary sex expression, is still represented on the statute books of two-thirds of the American States. It is interesting to learn that convictions for the offences of adultery and fornication still occur, although such convictions are uncommon. Quite apart from laws dealing with prostitution, which exist, of course, in this country as well, it is still possible to speak, in America, of a legal control of voluntary sex expression.

As in so many other instances, the present condition of sex morality can be understood only by a study of its history. This book provides such a history in a concise form for all interested in the subject. It is profusely documented, and evidences a wide and painstaking research. It is therefore the more surprising to find one quite astonishing mistake. The author confuses Augustine of Hippo, whose writings have so materially affected orthodox opinion on this matter, with the first Archbishop of Canterbury, the other saint of that name. M. HAMBLIN SMITH.

The Editors regret that owing to lack of space a large number of reviews have been omitted, but they will be included in the next number.

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Part III.—Epitome of Current Literature.

1. Neurology.

Researches upon the Lymphatic Vessels of Nerves [*Ricerche Anatomo-Topografiche e Microscopiche sui vasi Linfatici dei Nervi*]. (*Archivio Generale di Neurologia, Psichiatria e Psicoanalisi, June*, 1930.) *Defrise, A.*

The author studied, in newborn infants and dogs, the origin of the lymphatic capillary network in the peripheral nerves. He subscribes to the view that the network is derived from a closed system isolated from the interlamellary channels of the perineurium.

The perineurium constitutes a kind of barrier between the endoneural spaces, on the one hand, which are in direct communication with the subarachnoid space, bathed in cerebro-spinal fluid and devoid of lymphatic vessels, and on the other hand, the epineural or interfascicular channels, which form a proper lymphatic network.

The collecting vessels do not travel far before they open into the ordinary deep lymphatics. H. W. Eddison.

Changes in the Central and Peripheral Nervous System produced by Strontium [*Sulle alterazioni del Sistema Nervoso Centrale e periferico nell' avvelenamento sperimentale da Stronzio*]. (*Rivista Sperimentale di Freniatria, March* 31, 1930.) *Chinaglia, A.*

The author produced motor paralysis in pullets by the oral administration of strontium in the form of an insoluble salt, such as the carbonate. He found that the metal exerts a selectively toxic action upon the anterior horn-cells, which is shown by tigrolysis accompanied by a very slight reaction on the part of the interstitial tissue.

As the motor symptoms develop, the changes in the cells of the spinal cord become more marked and extend to those of the posterior cornua. They are characterized by vacuolation of the protoplasm and disappearance of the nucleus, varying in intensity with the degree of motor paralysis.

Even severe motor symptoms cleared up, and the birds became apparently normal after the administration of the metal had been stopped. This recovery of function was not accompanied by a proportionate retrogression of the microscopical changes, and tigrolysis remained, associated with hyperchromasia.

The absence of a relationship between the rapid return of function and the slow dissolution of the tigroid substance confirms, in the opinion of the author, the principle that nervous function is not

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irreparably abolished in cells which are in a state of tigrolysis. He considers that the presence of this substance is a trophic phenomenon. H. W. EDDISON.

The Pacchionian System. (*Arch. of Neur. and Psychiat., January,* 1930.) *Winkelman, N. W., and Fay, T.*

The authors studied the subarachnoid villi and Pacchionian granules in more than 200 autopsies. They divide the changes observed into (*a*) aplastic, (*b*) hypoplastic, (*c*) hyperplastic, (*d*) fibrotic, (*e*) infiltrative. These changes may form a basis for disturbances in the circulation of the cerebro-spinal fluid.

G. W. T. H. FLEMING.

Villi (Pacchionian Bodies) of the Spinal Arachnoid. (*Arch. of Neur. and Psychiat., January,* 1930.) *Hassin, G. B.*

The author considers the spinal arachnoid villi as analogous to those of the cerebral arachnoid. They are numerous over the roots, where they are continuous with the perineural root-spaces. Hassin considers that the main avenue of escape for the cerebro-spinal fluid is probably by way of the perineural root or nerve spaces. Filtration or osmosis from the villi may take place into the venous dural sinuses. G. W. T. H. FLEMING.

The Rôle of the Hypothalamus and Mesencephalon in Locomotion. (*Arch. of Neur. and Psychiat., January,* 1930.) *Hinsey, J. C., Ranson, S. W., and McNattin, R. F.*

The authors experimented on cats and made sections at different levels through the brain-stem. They found that the most caudal plane of section that could be made, leaving the walking pattern still intact, was one extending from the rostral border of the superior colliculi to the rostral portion of the mamillary bodies. Some of the pre-spinal centres which remained and should be considered as possibly involved in walking and the regulation of tonus were: the red nucleus and the hypothalamus centres remaining, the substantia reticularis, the tectum, the cerebellum and the vestibular system. The upper part of the mesencephalic tegmentum and possibly its continuation into the hypothalamus are necessary for the regulation of tonus and the maintenance of equilibrium.

G. W. T. H. FLEMING.

Cerebral Circulation. XII: The Effect on Pial Vessels of Variations in the Oxygen and Carbon Dioxide Content of the Blood. (*Arch. of Neur. and Psychiat., June,* 1930.) *Wolff, H. G., and Lennox, W. G.*

The authors continued their work on cats. They found that a decrease in the carbon dioxide of the blood resulted in a moderate decrease in the diameter of the pial arteries, whereas an increase in carbon dioxide was followed by a very marked increase in their

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size. An increase in the oxygen content of the blood resulted in a very slight decrease in the diameter of the arteries, and a marked degree of anoxæmia had a tendency to increase their size. The influence of carbon dioxide almost completely obscured that of oxygen. A variation in the ratio of carbonic acid to the bicarbonate of the blood which resulted in an acidosis caused dilatation, and a condition of alkalosis caused a constriction of the pial arteries. Dilatation of vessels was more readily produced than constriction. The authors emphasize that the chemical composition of the blood plays an important part in the regulation of the intracranial circulation. G. W. T. H. FLEMING.

The Effects of Anæmia on the Cerebral Cortex of the Cat. (*Arch. of Neur. and Psychiat., May*, 1930.) *Gildea, E. F., and Cobb, S.*

The authors experimented on cats, and after reviewing the literature up to date, conclude that cerebral anæmia, if sufficiently complete and prolonged, produces lesions that are demonstrable in sections of the cortex stained by Nissl's cresyl violet method. The most severe lesions consist in foci of necrosis. Shrunken homogeneous and dark-staining cells predominate in the lesions. Focal areas of necrosis require at least twenty-four hours to appear, but shrinkage, chromatolysis and homogeneous staining of the cells appear immediately after a period of cerebral anæmia which is sufficiently complete and prolonged to cause death. The lesions are usually diffuse, but the most marked changes occur in laminæ IV and V. Large and small pyramidal cells appear more susceptible than other cerebral cells. The oligodendroglia cells show little or no swelling. Anæmia of ten minutes results in permanent injury to the cortex, and not uncommonly in changes which end in death from convulsion or failure of the respiratory centre.

G. W. T. H. FLEMING.

Certain Characteristics of the Cortical Influence over the Sympathetic Nervous System in Man. (*Journ. of Nerv. and Ment. Dis., June*, 1930.) *Brickner, R. M.*

The author uses the term "sympathetic nervous system" as referring to the thoracico-lumbar outflow. He describes two patients with hemiplegia in whom the experiencing of an emotion produced exaggerated pilomotor phenomena on the hemiplegic side. The simple pilomotor reflex in the same zone was normal. In a case of partial section of the spinal cord the simple reflex was exaggerated, but there was no abnormal response to an emotional stimulus. The author thinks that there is a neuron of cortical origin which has a definite influence over, and is a part of, the sympathetic nervous system. This neuron probably terminates in the hypothalamus and in parts of the thalamus, whence a second one descends to the intraspinal cells of the first peripheral sympathetic neuron. In the hemiplegic cases there is an interruption of the cortico-hypothalamic neuron and in the spinal case in the second neuron.

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Both these neurons are probably anatomically associated with the pyramidal tract and may decussate with it.

G. W. T. H. FLEMING.

Clinical Note on the Convergence Reaction, Especially in Alcoholics. (*Journ. of Nerv. and Ment. Dis., June,* 1930.) *Schilder, P.*

When the healthy person with eyes closed stretches his arms parallel before him and tries to keep them still there is a tendency to diverge (divergence reaction of Hoff and Schilder). In alcoholics the author found a tendency to converge which is not always equally marked on both sides. This convergence passes away with the disappearance of the acute alcoholic intoxication. It is also present during abortive alcoholic deliria and in *delirium tremens*, and is due to a midbrain lesion. G. W. T. H. FLEMING.

The Influence of Intense Auditory Stimuli on the Arterial Pressure in Normal Persons and in the Deaf [*L'influence des excitations auditives intenses sur la pression artérielle chez les normaux et chez les sourds labyrinthiques*]. (*Journ. Neur. et Psychiat., January,* 1930.) *Nyssen, R., and Helmsmoortel, Jr. J.*

The authors hoped that their experiment would afford a means of testing the excitability of cochlear fibres. They found that loud sounds increased the systolic blood-pressure, but concluded this result was due to stimulation of extra-cochlear fibres.

W. D. CHAMBERS.

Mirror-Writing [*L'écriture en miroir*]. (*Ann. Med. Psych., April,* 1929.) *Critchley, Macdonald.*

The author discusses the origin and significance of this symptom. He has found it in some cases of right hemiplegia, often with aphasia, in early attempts at writing, especially by left-handed children, in backward children, diplegics and the insane, and in cases of congenital word-blindness. It is due, in his opinion, to two factors, one motor, the other intellectual. The author also mentions five cases of reversed (upside down) writing which he has met. Fifteen references to the subject in the literature are given.

W. D. CHAMBERS.

Congenital Auditory Imperception. (*Journ. of Neur. and Psychpath., April,* 1929.) *Worster-Drought, C., and Allen, I. M.*

A continuation of the investigation of a case by Head's method. The disorganization of speech mechanism had resulted in the development of an idioglossia, a purely individual language representing an extreme form of mispronounced conventional language. Head's method was strictly adhered to, except that two separate tests were substituted for each test which demanded an oral response, in order to avoid the error which might have been occasioned by the patient's lip-reading. Head's method disclosed more than did the ordinary routine examination, but it is doubtful if it will prove of value in congenital aphasia. M. HAMBLIN SMITH.

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A Contribution to the Histopathology and Pathogenesis of Amyotrophic Lateral Sclerosis. (*Riv. di Pat. Nerv. e Ment., November–December*, 1929.) *Noto, G. G.*

A case is described in which the cortex was intact, the centrum ovale slightly affected, the internal capsule intact, while the cord was profoundly affected, especially in the cervical region. The corresponding motor cells were involved. The antero-lateral tract was affected, but least in the dorsal region. Small areas of demyelination were described in the external arcuate fibres of the medulla. The main feature to which the author draws attention was the presence of small areas of rarefaction around the vessels in the crossed pyramidal tract in the cervical region. From their non-systemic character and their association with vessels he concludes that the disease is of toxic origin, and he draws a parallel between it and subacute combined degeneration, in which condition similar areas have been found by Lichtheim. H. W. EDDISON.

Considerations on the Pathogenesis, Diagnosis and Treatment of Serous Meningitis [*Considérations sur la pathogénie, le diagnostic, et le traitement des méningites séreuses*]. (*Journ. Neur. et Psychiat., January*, 1930.) *Prof. Marinesco, Sager, O., and Grigoresco, D.*

Serous meningitis is the name applied to a localized or general increase in the amount of the cerebro-spinal fluid. It is due to the combination of an infection or intoxication and some endocrine disorder. The chief symptoms, in addition to those due purely to increased intra-cranial pressure, are early fixation of the pupils (quickly relieved by lumbar puncture), increased tension of the cerebro-spinal fluid, only slightly lowered by the removal of 10 c.c., absence of localizing signs and somnolence. Treatment consists in the removal of 10 c.c. of cerebro-spinal fluid on three occasions at intervals of 3–4 days, and in the administration of 33% hypertonic glucose serum. Atropine appeared to make no difference. Three cases of a series are fully described and the theories of the production of cerebro-spinal fluid are discussed.

W. D. CHAMBERS.

Central Neurogliomata with Recklinghausen's Disease [*Neurogliomatose centrale et maladie de Recklinghausen*]. (*Soc. Clin. de Med. Ment., July*, 1929.) *Dupouy, R., Courtois, A., and Pichard, H.*

The case is described of a young woman in whom progressive deafness, confusion and cutaneous tumours were observed. At the autopsy quite large tumours at the ponto-cerebellar angle were found, though they had caused no symptoms but the deafness. In addition to the tumour of the eighth nerve there were meningeal psammomata and a diffuse gliomatosis as well as the subcutaneous neuromata. W. D. CHAMBERS.

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Tumour of the Third Ventricle in a Syphilitic [*Tumeur du 3e ventricule chez un syphilitique.* (*Soc. Clin. de Méd. Ment., July,* 1929.) *Chatagnon, Trellus and Pouffary.*

This paper is a very careful account of the symptoms and signs of an obscure case of tumour involving the third ventricle. Localizing signs were absent until a remarkably late stage.

W. D. CHAMBERS.

Metastatic Cerebral Tumour from Mammary Cancer Appearing Seven Years after the First Operation. [*Tumeur cérébrale métastatique d'un cancer du sein récidivé 7 ans aprés la première intervention*]. (*Soc. Clin. de Méd. Ment., July,* 1929.) *Courtois, A., and Thomas J. A.*

Except that it was less vascular, the cerebral growth in this case had exactly the characters of the previous mammary cancer. Apparently simple mental symptoms, loss of memory, moodiness and auditory hallucinations preceded the cranial hypertension syndrome. The metastasis, the size of a large nut, was situated in the pons.

W. D. CHAMBERS.

Occlusion of the Aqueduct of Sylvius. (*Arch. of Neur. and Psychiat., June,* 1930.) *Shelden, W. D., Parker, H. L., and Kernohan, J. W.*

The authors describe six cases that came to autopsy. They fall into three groups of two. In the first group the condition was confined to the region of the aqueduct and was proliferative in nature. There was no evidence of any inflammatory process. In the second group were rapidly growing tumours in a very early stage of formation; one was an astroblastoma, the other a spongioblastoma. The third group represented a diffuse inflammatory process involving almost the whole ventricular tissue. These two patients were considerably older than the other four.

G. W. T. H. FLEMING.

Human Rabies and Rabies Vaccine Encephalomyelitis. (*Arch. of Neur. and Psychiat., June,* 1930.) *Bassoe, P., and Grinker, R. R.*

The authors describe the pathology of a case of rabies vaccine encephalomyelitis. Only about one in 2,200 cases vaccinated develops paralysis. The changes consisted of perivascular round-cell infiltrations with demyelinization and axis cylinder destruction. There was a typical toxic reaction in ganglion cells, vascular endothelium and oligodendroglia. The site of predilection for the rabies infiltration was the medulla, tapering mildly into the pons and cervical cord. The substantia nigra was in no way affected as in epidemic encephalitis. The authors discuss the differences between the pathological processes in rabies vaccine lesions and in toxic encephalomyelitis. The evidences of inflammation, the

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identity of the nervous lesions from rabies vaccine, cowpox vaccine, variola and measles, and the perivascular softenings in subacute rabies, suggest that the vaccinal lesions represent an attenuated rabies virus disease transmitted by the vaccine.

G. W. T. H. FLEMING.

A Rare Type of Crossed Paralysis [*Rarissimo tipo di Paralisi Alterna Inferiore*]. (*Riv. di Pat. Nerv. e Ment., March–April*, 1930.) *de Giacomo, U.*

The author describes a case of crossed paralysis in which an ipsiateral sixth nerve palsy was associated with contralateral paralysis of the face, arm and leg, in which the facial paralysis was of the supranuclear variety with the usual participation of the lower branch of the facial and the hypoglossal nerve. There was no reaction of degeneration and no sensory changes. He points out that there are two situations in which a lesion may affect the facial and the infranuclear sixth nerve: (1) where the supranuclear facial fibres, decussating to reach the seventh nucleus, cross the path of the infranuclear sixth fibres, and (2) where the infranuclear seventh fibres cross the same path of the sixth fibres to hook round the sixth nucleus before emerging. In the first case the facial paralysis will be of the supranuclear variety, and in the second, the case in point, of the infranuclear.

H. W. EDDISON.

Decerebrate Rigidity and Reflex Tonus of the Neck in Apoplectic Coma. (*Riv. di Pat. Nerv. e Ment., January–February*, 1928.) *Buscaino, V. M.*

The author gives an interesting and detailed account of the symptoms and *post-mortem* findings in a case of cerebral hæmorrhage in which decerebrate rigidity was clearly present.

H. W. EDDISON.

On an Epidemic of Disseminated Inflammation of the Nervous System [*Sur l'épidémie d'inflammation disséminée du système nerveux*]. (*L'Encéphale, July–August*, 1929.) *Flatau, E.*

Accompanied by an interesting micro-photographic plate, this lengthy article deals with an epidemic of encephalitis occurring during 1928. The author's conclusions are that the occurrence of certain small outbursts of encephalomyelitis during the years 1924–28 is probably a phenomenon correlated with the greater epidemic of encephalitis lethargica. The author says it is possible that in the same group could be classed the nervous complications appearing so commonly of recent years in the course of the neurotropic dermatoses (Levaditi), of which the encephalitis following vaccination is an example. Also there is to be traced some connection between these conditions and the increase in the number of types of cases of multiple sclerosis. It is impossible, he says, to solve the question of whether or not man has suffered a diminution in his resistance as a result of the epidemic.

The main thesis of his article is a tendency to unify a number of

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different affections of the nervous system and to ascribe them to the same causal factor, which he suggests may be a filter-passer.

W. McC. HARROWES.

Catatonic and Parkinsonian Syndromes Induced by the Action of Amines. (*Riv. di Pat. Nerv. e Ment., January–February*, 1929.) *Buscaino, V. M.*

The author discusses the chemical constitution of bulbocapnine and mescaline, and draws attention to their property of giving rise to symptoms of dementia præcox and Parkinsonism, which symptoms are regarded by him as an expression of amine-toxicosis.

H. W. EDDISON.

Post-encephalitic Parkinsonism as a Chronic Infection. (*Journ. of Neur. and Psychopath., April*, 1929.) *Hill, T. R.*

The balance of evidence is in favour of a persistence of the infection in many chronic cases; but the activity is very low, and the process often dies out completely. Active infection may be present for a considerable length of time before any signs of disease occur. It is advisable to treat all cases of epidemic encephalitis as cases of active infection. The symptoms must be regarded as due to neuronal destruction. No remission can be expected from treatment of the active infection, even if it were successful; the most to be hoped for is inhibition of its progress.

M. HAMBLIN SMITH.

Epilepto-Parkinsonian Encephalitic Syndrome [*Syndrome comitio-Parkinsonien encéphalitique*]. (*Soc. Clin. de Méd. Ment., July*, 1929.) *Marchand, L., Courtois, A., and Lalan, J.*

A very full neurological description of an obscure case in which progressive Parkinsonianism was associated with epileptiform attacks.

W. D. CHAMBERS.

Cerebello-pyramidal and Mental Syndrome in the course of Varicella. [*Syndrome cérébello-pyramidal et mental au cours de la varicelle*]. (*Journ. Neur. et Psychiat., January*, 1930.) *Vermeylen, G., van Bogaert, L., and Vervaeck, P.*

The case described showed, in addition to manic-depressive symptoms, ataxia, nystagmus, ocular palsy, increased deep reflexes and a positive double Babinski. The case is fully discussed, and there are many references to neurological complications associated with varicella.

W. D. CHAMBERS.

Considerations Regarding Extrapyramidal Epilepsy. [*Considérations sur l'épilepsie extrapyramidale*]. (*L'Encéphale, March*, 1930.) *Villaverde, José Maria de.*

The basis to some extent of this article is the statement by Binswanger that "the whole epileptic attack may be explained by the putting in action of certain sub-cortical centres."

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The article is accompanied by a very large bibliography and contains many references to the literature.

The author quotes a number of cases, personal and otherwise. Many of them present the common enough characteristics of loss of consciousness with a seizure and more or less rigidity, but without any of the signs of pyramidal disturbances which are associated with ordinary epileptic attacks, and his thesis is that such conditions are due to some disturbance of centres lower down in the hierarchy of nervous activity than the cortex. He suggests that the pallidum, the lenticular area and the corpus Luysii, which are responsible for convulsions in infants, are also the seat of the lesions producing this type of epilepsy.

W. McC. HARROWES.

Vagotonia and Cortical Epilepsy [*Vagotonie et épilepsie corticale: recherches expérimentales*]. (*L'Encéphale, July–August*, 1929.) *Santenoise, D., Vare, P., Verdier, H., and Vidacovitch, M.*

This work is an indication of the strong tendency in French psychiatric circles to invoke disturbance of the vaso-vegetative system as a mechanism in a great many types of disturbance. Here the authors attempt to relate epilepsy and organo-vegetative disturbances. In this connection previous work on the relation between the oculo-cardiac reflex and epilepsy is mentioned, and hyper-vagotonia has been supposed to play a pathogenic *rôle* in the production of epileptic crises. Animal experiments by these authors have indicated that smaller electrical stimuli are sufficient to produce epileptic crises in vagotonic animals, or where the cerebral excitability has been influenced by pharmacodynamic agents acting on the vagus. They have discovered that as a general rule vagotonics have a low, and hypo-vagotonics a high chronaxy, and that the relation between the chronaxy and the amount of electrical stimulation necessary to produce an epileptic seizure is one of direct proportion. They show that the vagus has some influence upon the general chronaxial level by conditioning the production of what they call a thyro-hormone, and that under the influence of this, different degrees of excitability are produced. Their experiments can be grouped under various headings. They give the results of vago-section, the effect of pharmacodynamic agents producing vagotonia, and the effect of the administration of thyroid extracts. They feel that the results of their experiments indicate definitely that there is a connection between vagotonia and epileptic predisposition, partly by the action of the vagus in some indirect way upon psycho-motor centres, partly by the action of the vagus in producing a thyroid secretion, which influences the chronaxy of the psycho-motor centres. In short, there is a parallelism between the excitability of the pneumogastric nuclei and the excitability of the motor cell areas. The research has all the appearance of being extremely painstaking and has been very carefully worked out. It is felt, however, that their original thesis with reference to the oculo-cardiac reflex detracts from the value of their work. This reflex is definitely

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modified in katatonia, and it would be interesting to note whether similar vagotonic alterations might not be discovered there also.

W. McC. HARROWES.

The Anatomic Substratum of the Convulsive State. (*Arch. of Neur. and Psychiat., May*, 1930.) *Spielmeyer, W.*

The author gives an account of his own work, especially on the sclerosis of Ammon's horn. This area of sclerosis when stained by Nissl's method shows a loss of ganglion cells. In the earliest stages of this condition, there is a loss of cells and an increase of glia cells of the rod form on the border between the area attacked and the normal tissue. These changes are almost as frequent in the cerebellum, where there is a proliferation of the fibroglia in the molecular zone. Spielmeyer considers these changes to be closely related to the epileptic attacks and probably of circulatory origin. He found similar changes in arterio-sclerosis, thrombosis and embolism. The localization in Ammon's horn and in the cerebellum is due to the unsatisfactory blood supply of these areas. One of Spielmeyer's co-workers, Neuberger, has demonstrated recent destruction of muscle elements in the heart without organic changes in the coronary arteries.

G. W. T. H. FLEMING.

The Problem of Localization in Experimentally Induced Convulsions. (*Arch. of Neur. and Psychiat., May*, 1930.) *Pike, F. H., Elsberg, C. A., McCulloch, W. S., and Chappell, M. N.*

The authors believe that both the rubro-spinal and pyramidal systems are concerned with the control of movement. The pyramidal is the main motor system responsible for clonic convulsions. Before the pyramidal fibres have become myelinated and attained their full functional capacity, clonic convulsions arise from lower motor mechanisms. When the central nervous system is otherwise intact, clonic convulsions are of cortical origin. Tonic convulsions arise from the lower motor mechanisms in the period immediately succeeding an injury to the cortical motor mechanisms. They are absent in the early post-operative stages in animals in which the midbrain has been split longitudinally in the mid-line, while clonic convulsions persist if the pyramidal system is intact.

G. W. T. H. FLEMING.

Diagnostic Significance of Sensory Auræ in Epilepsy. (*Brit. Journ. of Med. Psychol., May*, 1930.) *MacCurdy, J. T.*

The author investigated the auræ of a large number of patients at the Manhattan State Hospital and the Craig Colony. The first conclusion he came to was that no such thing as a pure motor aura existed. The idiopathic aura is either sensory or psychic, and is invariably accompanied by an emotional reaction which is always of a painful nature, and is usually fear. Every patient with a

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definite aura always has attacks in which the aura alone occurs and does not lead to a fit. These MacCurdy looks on as psychoneurotic symptoms not followed by epileptic manifestations. The general sequence of events in cases with definite auras is somewhat as follows: There is first a prodromal stage lasting from a few hours to days, which is characterized by restlessness, depression, irritability or some general mood alteration. The patient, on the first appearance of the aura, makes some effort to distract his attention from it; he feels that success depends on will-power. In the last stages the patient finds the sensations of the aura so engrossing that he can give no attention to anything else. His fear culminates in the belief that the fit is now inevitable and then consciousness is lost. Distraction in some cases is a successful treatment of the aura. In Jacksonian epilepsy the aura is essentially motor in type. If a sensory aura is removed by any means the patient is apt to substitute another one.

G. W. T. H. FLEMING.

Interpretation of Encephalographic Observations; Comments on Those Found in the Convulsive State. (*Arch. of Neur. and Psychiat., May*, 1930.) *Pendergrass, E. P.*

The author found in the convulsive state atrophy of the brain and arachnoiditis. From a roentgenological point of view it is possible to distinguish two main groups of atrophy—the superficial, presumably due to pressure, and the deep, which is ascribed to a lesion within the cortex. The author classifies atrophy of the brain into three groups: those due to (1) birth trauma, (2) trauma later in life, (3) those in which no factor could be assigned. In the first group in children the changes were very definite and consisted of atrophy or aplasia beginning in the frontal lobes. The area next affected was the parietal lobe in the region of the motor area. The atrophy extends towards the base, and finally one finds compensatory pathways in the occipital region which may be regarded as evidence of atrophy of the brain. These conditions may be unilateral or bilateral. The cisterna venæ magnæ cerebri is usually the largest compensatory space. In the post-traumatic group there exists atrophy of the brain or arachnoiditis, or a combination of both. The frontal region seems to be the first to suffer. In more advanced cases the parietal region over the motor area suffers. In the most advanced cases there is almost complete disappearance of the subarachnoid markings in the frontal and parietal regions. In some cases there may be cerebellar atrophy. In those encephalograms in which there is an absence of subarachnoid pathways arachnoiditis appears to be present. This may be localized on the motor area, and be the only positive observation in Jacksonian epilepsy. This has been confirmed at operation several times. The arachnoiditis is more often associated with Jacksonian epilepsy, and may be unilateral, bilateral, localized or associated with atrophy of the brain. In the idiopathic group the atrophy does not vary from that seen in the post-traumatic group. According to the

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author, slight or even marked atrophy may occur without convulsive seizures, but mental defect is then present.

G. W. T. H. FLEMING.

Epileptiform Convulsions; The Incidence of Attacks in Cases of Intracranial Tumour. (*Arch. of Neur. and Psychiat., May*, 1930.) *Parker, H. L.*

The author investigated 313 cases of intracranial tumour and found 21·6% with major epileptic seizures. All the tumours associated with convulsions were situated above the tentorium. In most of these cases the tumour was situated in the frontal, parietal or temporal regions. Convulsions occurred as an initial symptom of the disease in 38 cases. G. W. T. H. FLEMING.

Neurosomatic Deterioration in Epilepsy. (*Arch. of Neur. and Psychiat., May*, 1930.) *Hodskins, M. B., and Yakovlev, P. I.*

The authors conclude that modification of muscular tonus and of postures are the outstanding elements of an akineto-hypertonic symptom-complex which is the basic clinical expression of progressive neuro-muscular deterioration. On the background of this symptom-complex are observed (1) progressively developing and eventually bilateral symptoms of the pyramidal series with spasticity in the lower extremities; (2) progressively developing symptoms of pseudo-bulbar type with contractures in the lower extremities and a tendency to a flexion attitude (clasp-knife posture of the body); (3) ultimate flexion paraplegia of cerebral type with tendinous retractions and advanced dementia. These neurological changes are different in nature, and independent in their clinical evolution from the residual syndromes of primary cerebral lesions so often found in epileptic patients. Injection of scopolamine abolishes muscular rigidity and hypotonia develops instead, tonic postural reflexes disappear and pyramidal symptoms become elicitable. The authors regard the relative intolerance of epileptics to scopolamine as evidence of deficiency or weakness of the pyramidal system.

They regard the pathological process underlying the neurosomatic deterioration as primarily a subcortical one gradually becoming more diffuse and more destructive. G. W. T. H. FLEMING.

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2. Psychology and Psycho-Pathology.

The Effects of Alcohol and Caffeine on Intelligent and Associative Performance. (*Brit. Journ. of Med. Psychol., May*, 1930.) *Cattell, R. B.*

The author carried out experiments on 25 men and 25 women, and found that a dose of 20 grm. of alcohol lowers the intelligence quotient and decreases the power of recalling past experience.

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In the same way a dose of 0·4 grm. of caffeine is detrimental to intelligent or associative performance. With half the dose there is some evidence that intelligence and memory are affected oppositely, the former improving on 10 grm. of alcohol and deteriorating under 0·2 grm. of caffeine and the latter showing the reverse behaviour. There were certain well-marked individual differences which were very similar among blood relations. The individual peculiarities of reaction appeared to be connected with the particular nature of the conative impulses and to a lesser extent with temperament and character. G. W. T. H. FLEMING.

Psychological Monographs: University of Iowa Studies in Psychology. No. XIII. No. 181. 1930.

This number contains the following papers:

Disturbances in Breathing during Stuttering. Fossler, H. R.

This investigation was carried out on a number of stutterers and of normal persons as controls, thirteen of each. Curves were taken by means of laryngographs and breathing curves of lower and upper thoracic and of abdominal breathing by means of pneumographs. The subjects were required to talk about any matter they liked, and the experimenter indicated a stuttering period by depressing an electric recording stylus by means of a key, taking at the same time notes of the difficult words. The study of the records showed that there are some observable, typical, recurrent patterns, which are not, however, definitely associated with the attempt to produce any particular sound or group of sounds. There was no significant difference between stutterers and normals with amplitude of inspiration or expiration, but stutterers were about 50% more variable than normals in the times of inspiration and expiration. There were twice to five times more anomalous curves for stutterers than for normals. Stuttering may or may not be accompanied by tonic and clonic spasms in the breathing and laryngeal apparatus, by temporal opposition of the breathing curves, by attempts to speak on inspiration, by greatly prolonged expiration, or by a breaking up of the normal rhythm of speech.

Measurement of Musical Talent for the Prediction of Success in Instrumental Music. Larson, W. S.

The possession of talent is basic for success in music. Musical talent is a hierarchy of talents, many of which are entirely independent of one another. The purpose of this study was to determine whether those musical capacities which may be tested by the Seashore "Measures of Musical Talent," have been indirect criteria in the selection of members of instrumental musical organizations at different levels of achievement, and on the basis of results obtained, to determine whether the Seashore tests may be of value in the prediction of success in instrumental music. The tests used were concerned with the senses of pitch, of intensity, of time, of consonance, of rhythm and of tonal memory. It was found that pitch,

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rhythm and possibly intensity were of some slight influence in the selection of students; time, consonance and tonal memory had apparently no influence for the beginners' instrumental classes. As the students advanced it was, however, found that these tests became more and more important.

A Study in the Seashore Motor Rhythm Test. Nielsen, J. T.

This investigation had a two-fold purpose: (1) To study training in rhythmic performance; and (2) to improve and further to standardize a measure of rhythmic auditory-motor coordination which can be used as one of a series of tests in the prediction of ability and success in musical performance. The tests were performed with the Seashore phonographic chronograph on twenty students taken at random and twenty selected by their teachers from the School of Music. It was found that capacity in motor rhythm as measured by this test correlates significantly with musical ability and performance. Motor rhythm can be slightly improved, but any improvement falls within the very early training period. There is no significant relation between the ability to tap rhythm and amount of improvement, or between musical training and improvement in ability to tap rhythm.

A Qualitative and Quantitative Study of the Emotion of Surprise. Patterson, E.

In this investigation the psychogalvanic reflex was used with the intention of measuring emotions. The allegation that by these means emotions can be measured has, however, been widely challenged, and the simple Wheatstone bridge has likewise found serious critics. Moreover, the situations devised to cause surprise seem to be much too complicated for that purpose—many, in fact, unsuitable. The electrodes used seem to be an improvement. The author admits that the data obtained do not give an objective basis for the differentiation of surprise from startle and fear.

Pitch-patterns and Tonal Movements in Speech. Root, A. R.

Before the grosser aspects of speech melody, the communication of "meaning" through inflection and the larger problems of the æsthetics of speech can be satisfactorily investigated, basic facts concerning the nature of pitch-patterns and tonal movement should be well established. To secure them was the purpose of the present study. Three approaches to the problem were followed in this research, namely, (1) the perception of pitch-patterns and tonal movement, (2) physical measurements of frequency-patterns and changes, (3) the relationship between the physical and perceptional pitch-patterns. For the perception of speech a number of phonograph records of speech were used, and for the physical frequency patterns the method of phono-photography described by Metfessel was used both for recording from phonograph records and

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in direct photography of the speaking voice. The general conclusions of this study are stated as follows: "Through a comparison of perceptual and physical pitch-patterns in speech, added verification is given for the statement that in speech there is a tendency to strike towards a more or less definite pitch, that movements tend to evince an intervallic relationship between pitches, that the slide is an incident resulting from the nature of the speech sounds and the action of the vocal musculature."

An Experimental Study in Control of the Vocal Vibrato. Wagner, A. H.

Refinements in control of the rate of vibrato oscillations can be effected through the influence of rhythm; control of the extent of vibrato oscillations can be learned by paying special attention to the action of the musculature having to do with controlled expiration until correct habits of control are formed. A. WOHLGEMUTH.

The American Journal of Psychology, vol. xlii, No. 2, April, 1930.

This number contains the following papers:

The Rôle of Context in Association Formation. Freeman, G. L.

It will doubtless be generally admitted that in the study of association little account has been taken of certain factors, *e.g.*, assimilation and apperception, but as these factors can be kept fairly constant in experiments conclusions may nevertheless be drawn from the results. The author's statement that "the alleged linkage of meaningless items (he worked with nonsense-syllables) through repetition simply does not occur" is as unwarranted as it is dogmatic. As a matter of fact nonsense-syllables are, as the reviewer has pointed out elsewhere,* anything but the ideal material for the study of association, for two fundamentally different kinds of memory are involved, namely the physiological memory (*i.e.*, here motor memory) and the psychological memory (*i.e.*, here visual memory).

Perception in the Region of the Optic Disc. Scofield, C. F.

The observations of the author confirm previous evidence for the hypothesis that the visual phenomena which occur when light stimuli are directed upon the blind spot are due to the stimulation of sensitive retinal areas as a result of the diffusion of light by the refracting media of the eye. This view is opposed to Helson's, reported on p. 349 of this volume.

Spearman's Correction for Attenuation. Cureton, E. E., and Dunlap, J. W.

The authors come to the conclusion that no formula involving correlation coefficients alone gives an unbiased estimate of the

* Wohlgemuth, A., "On Memory and the Direction of Association," *Brit. Journ. Psychol.*, 1913, v, p. 447, *et seq.*

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correlation for attenuation; that the arithmetic mean is to be preferred to the geometric mean in formulas of the observed intercorrelations; that a formula implied in a derivation by Kelley is the best for practical computation; that the probable error of this formula has been derived; and that tables have been prepared to facilitate the computation.

The Perception of Form in Peripheral Vision. Zigler, M. J., Cook, B., Miller, D., and Wemple, L.

Four different fields of apprehension of form are demonstrated in the visual field in the four major quarters. In the outermost, the "figureless field," the background only is perceived. In the adjacent field, that of the "formless figure," an unorganized mass of marks or lines which are meaningless is vaguely seen, and the principal dimensions may be stated. The next is the "formlike figure" zone; here figure-formation begins, but the figures are most indistinct. The central zone is that of the "clear figure"; the details of the figure are accurately perceived.

A Phenomenological Description of Retinal Rivalry. Meenes, M.

The author experimented with coloured glasses and figured backgrounds, hueless figures and also solid objects and describes the results. "Rivalry is defined as the differential behaviour of two visual members integrated into a 'unit-like complex.' It is a complex of durative visual experience in which one set of experiences, apprehended as a unit, behaves differently from another set of experiences, also apprehended as a unit."

The Posture of Nursery School-children During Sleep. Boynton, M. A., and Goodenough, F. L.

This paper reports a series of observations on 56 children in an Institute of Child Welfare. There was a total of 278 nap-periods. The rank-order of postures was as follows: Right-side, left side, abdomen, back. Sidis' assertion about right-handedness and posture on the right side was not confirmed. No correlation was found between degree of dextrality and either percentage of total sleeping-time spent on the right side or percentage of times the child fell asleep on the right side.

Comparative Suggestibility in the Trance and Waking States. Hull, C. L., and Huse, B.

The experiments were performed with University students in whom the hypnotic state could be easily induced. They were blindfolded, and the experimenter standing in front of the subject suggested that he was falling forward. The time of the moment of the suggestion and the swayings of the subject were recorded on a kymograph. It was found that the trance-response time

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was 60% shorter than the waking-state suggestion. If a second suggestion was begun within two minutes or so after the termination of the reaction to the previous suggestion, and in the same state, the suggestion-time of the second was reduced about one-fourth. A. WOHLGEMUTH.

The American Journal of Psychology, vol. xlii, No. 3, July, 1930.

This number contains the following papers:

An Experimental Study of Observational Attitudes. Anderson, O. D.

"It is now generally understood that the results of descriptive, as well as of psychological, experimentation must carefully take into account the precise way in which the observer conceives of, and enters upon, his task. Furthermore, the experimenter cannot safely assume that his observers actually adopt and constantly maintain the experimental posture which is called for in the formal instruction." This opening statement is perfectly correct, and has been known to psychologists practically since the inception of experimental psychology proper. The experimenter has therefore to be most careful in the choice of his observers, where introspective data are of importance, and any deviations from the required attitude will be recorded in the protocols. If the author had analysed such protocols and extracted the various initial attitudes recorded by the observers, he would have rendered a greater service to psychologists than by the present investigation. Here the observer has no real task to perform in a prescribed attitude, the causal and accidental deviation from which may have proved of importance to the psychologist, though he was instructed carefully to observe the initial way of taking the visual or auditory stimulus respectively.

Some Factors Affecting the Relative Efficiency of Certain Modes of Presenting Material for Memorizing. Koch, H. L.

The material used in this investigation consisted of nonsense syllables which were presented to the subjects in series of twelve in a memory-apparatus for visual learning, or spelled out at the same rates for auditory learning. The series was presented continuously, the subject having to anticipate the following syllable of the series until no more mistakes were made. The two methods were also combined. The responses were given in three ways, *viz.*, by pronouncing, spelling the syllable or writing it. The results are somewhat uncertain, but there is little doubt that the combined visual-auditory presentation shows the best result; the visual comes next, and the auditory last. It seems to be unknown to the author that nonsense syllables are most unsatisfactory material for investigation of the visual memory. It is very difficult to eliminate the auditory-motor factor.

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Relationship between the Absolute and Differential Thresholds for an Auditory Stimulus. Kenneth, J. H., and Thouless, R. H.

The problem with which this investigation is concerned is the relationship between the absolute and the differential threshold. Are they two different phenomena, or is the absolute threshold simply the limiting value of the differential threshold obtained when the lower of the presented stimuli equals zero? The stimuli chosen were auditory—sounds produced by a loud-speaker and an ingenious arrangement of two resistances. It was found that the absolute and differential auditory thresholds were continuous with each other. There is no sudden emergence of a new law when the value of the absolute threshold of the stimulus is passed, and Weber's Law is very far from being fulfilled for low stimulus values.

Some Quantitative Experiments with Eidetic Imagery. Gengerelli, J. A.

The writer describes some experiments with two girls, aged 11 and 15 years, which appear to be rather of an exploratory character.

Reaction-time, Flicker, and Affective Sensitiveness as Tests of Extraversion-Introversion. Washburn, M. F., Hughes, E., Stewart, C., and Sligh, G.

The results obtained do not encourage the belief that objective tests of extraversion-introversion will be found.

A. WOHLGEMUTH.

Psyche, No. 40, *April*, 1930.

This number contains the following articles:

The Sexual Problems of Adolescence and Adult Life.—I. Crookshank, F. G.

The author professes to treat the subject from the standpoint of Adler's individual-psychology but appears to have retained a good many points of Freudian views, such as the Œdipus complex, narcissism, etc. Sexual repression is considered incompatible with wholesome, non-neurotic life, and a proper sexual adjustment is necessary for the fullest development of such life. Social conventions, in respect to sexual life, must be so adjusted that the greatest happiness of the greatest number, and the greatest stability of the community, together with the greatest security of the individual, are alike ensured and promoted. The secret of individual-psychology, in sexual, social, familial, or occupational relationships, lies in the maintenance of a just balance between the demands of the ego and the group or community. The trauma, the insult, the injury are less important than the courage with which they met. There seems little to quarrel with in these Adlerian points of view, although the retention of the few Freudian points seems to be unwarranted.

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Synæsthesia in Music. Vernon, P. E.

In this paper coloured hearing or musical synæsthesia is discussed from a new angle, and (1) pitch, (2) timbre or tone colour, (3) keys or tonalities, (4) chords or progressions are each considered in relation with (*a*) colours, tastes, odours and temperatures, (*b*) visual, kinæsthetic or symbolic qualities, (*c*) emotional qualities or affective characterizations.

The Artistic Process. Bruen, C.
Mechanism and Vitalism in the Light of Critical Biology. von Bertalauffy, L. (Vienna).

This is a defence by a vitalist of Eugenio Rignano's vitalistic or teleological views against an attack by Needham, of Cambridge.

The Psychology of Belief. Lawton, G.

This is a popular essay on belief. Belief means here not what is held to be true, but what one would wish to be true. When the scientific worker walks out of his laboratory, he ceases, so we are told, to be a scientific worker, "he becomes a human being, a layman, subject to the same emotions as all of us." It is the necessity of this emotional relief which is the root of religion. Prayer, a diary, the autobiography, the subjective work of fiction, the confidante, the Catholic confessional, the evangelist and revivalist audience, the spiritualistic message bearer, the psycho-analyst—all are the same type of relief. Many of those who cannot accept the conventional religious systems take as a substitute the system of atheism. To deny the commonly accepted God and doctrine of immortality gives as much emotional satisfaction as to affirm them. The solemn denial of God is a religious act.

A. WOHLGEMUTH.

Psyche, No. 41, July, 1930.

This number contains the following articles:

The Psychology of Debabelization. Editorial.

A further plan for "Basic English" as a universal language.

Can Social Engineers Improve the International Language Situation? Shenton, H. N.

A paper on the same subject.

On Individual Psychology and the Sexual Problems of Adolescence.—II. Crookshank, F. G.

This second lecture continues the theme of the first, published in the previous number of the journal. It gives sound advice and norms on Adlerian lines, not only to adolescents but to neurotics

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also. Adler's "masculine protest" is said to be identical with Freud's "castration complex"—a statement with which many would not agree. Further, the retention of Freud's anal-eroticism seems to be gratuitous.

Jealousy. Jones, E.
Recent Development in Psychical Research. Dingwall, E. J.

A severe criticism upon the unscientific approach of the subject.

Contributions of the New Physics to Philosophy and Psychology. Reiser, O. L.

This is an interesting paper. It deals with relativity, behaviourism, and consciousness. The dualism of mind and matter has, according to the author, been created by definition, and is not the result of inspection. The new physics provides us with a theory of matter by which the gap between consciousness and matter may be more easily bridged. Light and sight are next discussed. It is pointed out that in the whole gamut of radiations, from the Hertzian waves to cosmic rays, the visible spectrum occupies only a very small part, but that, in the evolution of the higher animal, sensitivity to these rays is sufficient to make the individual adapt itself to its environment. Quantum phenomena and vision and the undulatory theory of matter are briefly discussed, and in the concluding pages the author ventures on still more speculative ground dealing with physical relativity and psychological relativity.

First International Congress on Mental Hygiene, Washington, May 5–10, 1930.

A short account of the meetings. A. WOHLGEMUTH.

Internationale Zeitschrift für Individual-Psychologie, May–June, 1930.

This number contains the following:

The Conflict about Heredity [Der Kampf um die Vererbung]. Künkel, F.

The central problem of the conflict is whether acquired characters are transmitted, and the purpose of this paper is to evaluate the material accumulated from the standpoint of individual-psychology.

Abuse of the Concept of Diathesis [Missbrauch des Anlagebegriffs]. Holub, A.

Individual-psychology does not stand alone in its denial that normal and abnormal constitutions are opposites. Chvostek and O. Nägeli among many others champion the same view. It is a great mistake to consider the deviating or variable as degenerative.

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On the Investigation of Conscience [*Über Gewissenserforschung*]. *Zilahi, L.*

Individual-psychological principles are illustrated by extracts from, and comments on, Benjamin Franklin's autobiography.

A Spoilt Child and its Stepmother [*Ein verzärteltes Kind und seine Stiefmutter*]. *Wittmann, R.*

An account of a case on Adlerian lines.

Histrionic Talent among the Jews [*Die schauspielerische Begabung bei den Juden*]. *Rosenthal, H.*

After the destruction of Jerusalem the Jews were dispersed. In their new homes they were despised and persecuted and, unable to fight their persecutors with equal weapons, they had to observe them closely and resort to ruse and simulation. On the stage, which is symbolic of the world, possession and political power, the Jew's striving to assert himself finds its realization.

A. WOHLGEMUTH.

Internationale Zeitschrift für Individual-Psychologie, July–August, 1930.

This number contains the following articles:

Contribution to the Problem of Self-Knowledge [*Zur Frage der Selbsterkenntnis*]. *Dreikurs, R.*

Self-observation does not generally lead to self-knowledge but rather to self-deception. Self-deception serves to maintain the *status quo*, whilst self-knowledge means reformation. Self-knowledge is not so much the first step towards reformation, as the proverb states; it is rather conditioned by the turning away from that line of conduct which is indicated by the feeling of inferiority and the striving to self-assertion. But in this case it is the most important means for the recognition and amendment of a false life-plan and hence for the perfection of the total personality.

The Psychology of Stuttering [*Die Psychologie des Stotterns*]. *Mandell, S.*

Stuttering is a functional disturbance because it is the expression of social insufficiency and bad fitting-in. These are negative conceptions which postulate their opposite positive conceptions. The degree of a man's normality can only be measured by the mode of his adaptation to his environment or, as Adler would say, by his "community feeling."

André Gide's Development [*André Gide's Werdegang*]. *Brachfeld, O.*

Extracts from André Gide's autobiography with comments from the Adlerian standpoint.

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Edgar Allan Poe's Martyrdom [*Das Martyrium des Edgar Allan Poe*]. *Ehrenstein, A.*

John Milton. Greenwood, A.

Individual Psychology and the Roots of Religion (*Die Individualpsychologie und die Wurzeln der Religion*]. *Winkler, F.*

Individual-psychology considerations teach that religion is a sentiment immanent in man which springs from the desire for security, and is characterized on the one hand by the illusion of a power above the forces of Nature, and on the other hand by a meek submission to them. Magic and animism are not the precursors of religion; the roots lie in the inferiority feeling of man.

Social Work and Individual-Psychological Therapy in the Service of Christianity [*Soziale Arbeit und individual-psychologische Therapie im Dienste des Christentums*]. *Rodenberg, K.*

The Concept of Norm in Individual-psychology [*Der Begriff der Norm in der Individualpsychologie*]. *Kaus, O.*

A. WOHLGEMUTH.

The Rorschach Test and Personality Diagnosis. (*Amer. Journ. Psychiat., July*, 1930.) *Beck, S. J.*

Most psychological tests fail, in that they measure only a narrow sphere of personality. The affective life has been notoriously resistant to methods designed to probe it. The Rorschach test, which consists of a series of symmetrical ink-blots, has certain advantages. It is superior as an instrument for intelligence estimation. It offers a technique for satisfactory probing of the emotions. It is, essentially, a free-association test, and so provides a cue to the actual content of the patient's mind. The results of the application of the test to 87 children in a New York school for the feeble-minded are tabulated. The chief present drawback is the inadequacy of the norms. Further experimental work is indicated but the application of the test demands the expenditure of a considerable amount of time. M. HAMBLIN SMITH.

So-Called "Normal" Social Relationships Expressed in the Individual and the Group, and Their Bearing on the Problems of Neurotic Disharmonies. (*Amer. Journ. Psychiat., July*, 1930.) *Burrow, T.*

Man is faced with a conflict which is not only characteristic of the isolated neurotic, but is endemic in society at large. As human

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beings we are primarily physiological; we have become psychological only by adoption. By the group or phyletic method of analysis is meant a method that attempts to explain the reactions expressed in the relationships of individuals to one another, and to the social group, upon a physiological basis. Thus, for example, the fear reactions cited by Darwin are conservative organic reactions, belonging to the primary physiological system. But there is also an expression of fear which is human and social, and which belongs to the secondary, the psychological system. This secondary fear reaction is an obstruction to survival. Yet this does not mean that more emphasis should be placed upon physiology, and less upon psychology. Phylo-analysis emphasizes the reaction of the organism in its functions as a whole. Phylo-analysis traces to the confusion between the two systems the serious havoc in the emotional life of the individual expressed in the neuroses and in insanity; and it regards social disorders, such as crime and war, as likewise due to the disparity existing socially between the two systems. M. HAMBLIN SMITH.

Current Conceptions of Psychopathic Personality. (*Amer. Journ. Psychiat., July*, 1930.) *Partridge, G. E.*

The history of the conception known as psychopathic personality is described. The varied nomenclature and the still more varied systems of sub-classification are detailed. The conclusion is adopted that in the type of sociopathic personality we have a reaction which is best regarded as ranking with the functional mental disorder. It is probable that our division of mental disorders into psychotic and non-psychotic is mischievous. The essential trait in the socio-pathic personality is a deep and persistent set in some direction which produces anti-social or socially futile behaviour. Further work may result in the discovery of some more universal basal trait; or it may lead to the redistribution of the class. M. HAMBLIN SMITH.

The Significance of Hypnotic Sleep for the Study of the Development of a Personality [*La signification du sommeil hypnotique pour l'étude du développement d'une individualité*]. (*L'Encéphale, February*, 1930.) *Gackebough.*

The author describes his results in the employment of hypnosis as a method of obtaining early material from a patient. He links himself up with the veiws of Freud, and states that in this way he has confirmed the importance of infantile conflicts. The mechanism of hypnosis he explains along the lines of Pavlov, who suggests that there is in hypnosis a localized cortical activity, which has temporary control of the entire activity of both hemispheres, on the basis of an increased resistance to all stimuli arriving at this portion of the cortex, other than by the voice of the hypnotist.
W. McC. HARROWES.

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A Simple Dialogue on Freudianism [*Dialogue familiar sur le freudisme*]. (*Ann. Méd.-Psych., January and April*, 1928.) *Ameline.*

This is an amusing dialogue, in the Socratic manner, between an alienist and a neophyte, the subject being the weaker points in the teachings of Freud. W. D. CHAMBERS.

Immodesty Without Eroticism [*L'impudeur sans érotisme*]. (*Ann. Méd.-Psych., January*, 1929.) *Courbon, P., and Rondepierre, J.*

Cases of shamelessness without eroticism are not common, and the authors here record three which have recently been under their notice. Two of them were cases of dementia præcox and in the third the diagnosis was doubtful. In all three there was notable discordance between their conversation and their acts, and between their shameless conduct and their apparent sexual apathy.
W. D. CHAMBERS.

The Rôle of Psychical Factors in the Production of Organic Nervous Disease. (*Journ. of Neur. and Psychopath., April*, 1930.) *Rabiner, A. M., and Keschner, M.*

The authors consider that occasionally one comes across definite organic nervous disease which has developed subsequent to some psychic factor. They suggest that there is some disturbance of lipoid metabolism *viâ* the vegetative nervous system, which is supposed to produce degenerative lesions in the central nervous system. G. W. T. H. FLEMING.

Some Points of Importance in the Psychology of Anxiety. (*Brit. Journ. of Med.-Psychol., March*, 1930.) *Fairburn, W. R. D.*

The author regards anxiety as a chronic form of fear. This chronic fear may become acute and even develop into panic. Tendencies related to the sex instinct or libido are particularly prone to cause neurotic anxiety. He prefers Drever's attitude towards the relation of instinct and emotion to MacDougall's. The affective experience from an instinct when neither obstructed nor facilitated is called instinct-interest—there is no question of emotion. In the neurotic, escape from internal danger is obstructed and so fear develops. Neurotic symptoms are the product of an effort to escape from an ever-present internal danger which is the return of the repressed material. Psycho-analysis offers a therapy for the removal of this repressed material. Predisposition to neurotic disease may be looked on as depending on a congenital hypersensitivity of the instinct to escape.
G. W. T. H. FLEMING.

Some Neurologic Concepts Applied to Catatonia. (*Arch. of Neur. and Psychiat., January*, 1930.) *Orton, S. T.*

The author distinguishes three levels in the cortical mechanism which he calls "platforms." The first platform is the awareness

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of the origin of sensation, the second is the recognition of objects with mnemonic recall, the third the conceptual or symbolic elaborations and associations, chiefly those of language. The catatonic patient shows a reduction in speech varying from a decrease of the recall vocabulary to complete mutism. The steps in speech acquisition which correspond to stereotypies of speech in the catatonic correlate with the so-called arrival or first platform. In the catatonic the word received from without forms the pattern of a parrot-like motor response, and might do so without leaving a record of memory or without carrying understanding of its meaning. In catatonia there is a highly selective or differential reduction of functional integrity at the highest level.

G. W. T. H. FLEMING.

Mental Dissociation [*Sulla Dissociazione Mentale*]. (*Rivista Sperimentale di Freniatria, vol. liv, No. 2, June*, 1930.) *Morselli, G. E.*

The author, who contributes an article of a hundred pages on mental dissociation, preserves an open mind in the choice between the rival conceptions of dissociation (Charcot and Bleuler). He does not regard Freud's theory of psychic determinism as adequate. He proceeds to describe in detail a case which presented schizophrenic characteristics. It is difficult, however, to gather in what sense he uses the word "dissociation." Much of his criticism is directed against the theories of Breuer and Freud; yet, in a bibliography of 74 references, he devotes only two to Freud and one to Breuer and Freud jointly. H. W. EDDISON.

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3. Psychiatry.

Archivos Brasileiros de Neuriatria e Psychiatria, November, 1929.

This number contains the following articles:

A Contribution to the Medico-Legal Study of Traumatic Neurosis [*Contribucion al Estudio Médico-Legal de la Neurosis Traumâtica*]. *Estapé, J. M.*

The author indicates three stages in the history of the conception with which he deals—the organic, the functional, and that due to the psycho-analytic theory. He regards traumatic neurosis as a psychogenic illness, which follows a mental or physical shock. The various signs and symptoms which may be found in this condition are described, and the influence of neuro-psychopathic predisposition is considered. The article will be concluded in a future number.

The Schizophrenias, otherwise Dementia Præcox [*O grupo das Schizophrenias ou Demencia Precoce*]. *De Campos, M.*

The various clinical types and the characteristic symptoms of dementia præcox are considered. The development of the conception is described, and criticized. Attention is given to the

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question whether it would not be better to drop, as being misleading, the term "dementia," as applied to this particular type of patient.

Information on a Case of Loss of Identity at Collegno [*Pericia sobre o "Desconhecido" de Collegno*]. *Mingazzini, G., and Calligaris, G.*

An interesting account of a case which has some medico-legal bearings. The important question was whether the symptoms were genuine or feigned. The authors give detailed reasons for accepting the former view. M. HAMBLIN SMITH.

The Incidence of Congenital Syphilis in an Institution for the Feeble-Minded. (*Amer. Journ. Psychiat., May,* 1930.) *Woodhall, C. S.*

This investigation was made at the Fernald State School, Waverley, Mass. A Wassermann reaction, a Kahn test and a Hinton glycerol cholesterol precipitation test were performed in 1,314 cases (683 males, 631 females). The Hinton was found to be twice as sensitive as the other two tests. A diagnosis of syphilis was made in 7·2%. Congenital syphilis was present in 6.5%; this is to be considered the minimum rather than the true figure.

M. HAMBLIN SMITH.

Masturbation; Its Rôle in the Neuroses. (*Amer. Journ. Psychiat., May,* 1930.) *Stern, A.*

The manifestation of the sex impulse must be traced to its earliest appearance. Masturbation appears early, as the overt act of many kinds of sexual wishes. It should not, of itself, be considered pathological. It diminishes during the latency period, and recurs with the onset of puberty. Only then, and later, should the practice be regarded as of pathological significance. Its effects are to enhance fantasy activity, thus being detrimental to the patient's relationship with reality; it may lay the foundation for neurotic disturbance, by continuing infantile sexual activities, and may tend to the development of unfortunate character traits.

M. HAMBLIN SMITH.

Eugenic Sterilization in California. (*Amer. Journ. Psychiat., July,* 1930.) *Popenoe, P.*

An inadequate picture of mental diseases has been given by the study of chronic institution patients. In this paper, a group of 838 patients in the private practice of a physician on the Pacific Coast is studied. These patients came from homes above the average in socio-economic status. When age is taken into account, the private patients are found to have a high marriage rate. The divorce rate is much higher in patients with mental disease than it is in the general population; the divorcees constitute an unstable

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group, which has married early and divorced soon after marriage. Those who marry late are about as likely to have large families as those who marry early; this points to a wide use of contraceptives in the group. The number of living children in the completed family is three, this being a higher figure than that found in groups of college graduates. Dementia præcox patients have a diminished marriage rate, but the fecundity of those who marry is relatively high. If marriage and parenthood are undesirable among psychopaths, then further steps, voluntary or compulsory, are indicated.

M. HAMBLIN SMITH.

Future Incidence of Nervous and Mental Disease among Ex-Service Men. (*Amer. Journ. Psychiat., May*, 1930.) *Matz, P. B.*

This study was made for the purpose of estimating the future incidence of nervous and mental diseases among ex-soldiers. The subject is materially affected by legislative enactments. The probability of any ex-soldier incurring some form of such disease increases up to forty years of age. There is a slight decline, which continues to fifty years of age. After the latter age the probability of incurring such disease again increases.

M. HAMBLIN SMITH.

Manic-Depressive Psychoses in Identical Twins. (*Amer. Journ. Psychiat., May*, 1930.) *Bradley, I. A.*

Similar psychosis in identical twins is a rare occurrence. This is an account of two sisters, of strikingly similar physical constitution, who developed psychoses the symptoms of which presented marked resemblance. The observations tend to strengthen the view that mental disease depends upon an hereditary defect in the germ-plasm.

M. HAMBLIN SMITH.

Studies in Obsessive Ruminative Tension States. (*Amer. Journ. Psychiat., May*, 1930.) *Woolley, L. F.*

The reaction types grouped in this series are those which are generally diagnosed as psychasthenia. Meyer's terminology, built up around the root word "ergasia," is preferred. There is a close relation between obsessive ruminative tension states and the par-ergastic reaction sets. The relationship appears to consist in a similar fundamental constitution. The development of tension states depends upon an ability to compensate objectively for inferiority feelings; par-ergastic reactions depend upon an ability to achieve this compensation by withdrawal or fantasy. The unfavourable prognosis in obsessive and compulsive states depends upon the constitutional factors which relate these states to the par-ergastic reactions. Two typical cases are described, and a summary of the chief findings in 87 cases is presented.

M. HAMBLIN SMITH.

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Impulses to Incendiarism and Theft. (*Amer. Journ. Psychiat., May*, 1930.) *Goldwyn, J.*

An account of a case investigated by hypnosis. Fear traumata, occurring in childhood, constituted the ætiological factors. The patient had been intensely frightened by persons unexpectedly appearing before him. M. HAMBLIN SMITH.

State Board of Control, Wisconsin: Second Biennial Report. (*Medico-Legal Journ., November–December*, 1928.)

Criminology can be advanced only by study in courts and prisons. Woodworth's psychoneurotic inventory has been found very useful, and will be used as a routine examination for all future admissions. Among the admissions there were found to be 31% of mental defectives. Outdoor work and recreation are most valuable factors in moral regeneration. Sterilization of non-defective criminals is not recommended. M. HAMBLIN SMITH.

The Psychoneurotic Delinquent. (*Med.-Legal Journ., January–February*, 1930.) *Pescor, M. J.*

The Woodworth Personal Data Sheet was employed in the examination of 861 delinquents in Wisconsin. Of these 89 were found to be psychoneurotic. The norms were found to compare favourably with those found by Woodworth. The psychoneurotic delinquents are found to include, as compared with the non-psychoneurotic, a higher percentage of persons whose parents were foreign-born; whose home conditions were unfavourable; whose history showed a larger number of previous convictions; whose family history contains epilepsy or insanity; who have one or two children; and who have been divorced. As to treatment, general hygienic measures are recommended. Psychotherapy is considered to be impracticable in penal institutions.

M. HAMBLIN SMITH.

The Criminal Insane. (*Medico-Legal Journ., November–December*, 1928.) *Richmond, Frank C.*

The neuro-syphilis group is the largest, although the offences committed by the members of this group are usually of a minor character. The paranoiacs form the most dangerous group. Epileptics are most liable to sudden impulsive brutalities. Occupational therapy is useful in preventing deterioration in præcox cases. Prison psychosis usually arises on a basis of mental deficiency and is of a temporary character. Psycho-analysis has proved of value in the psychoneuroses, but it is not a practical procedure in an ordinary institution. M. HAMBLIN SMITH.

When is a Man Drunk? (*Medico-Legal Journ., May–August*, 1929.) *Herzog, A. W.*

A committee of the British Medical Association has decided that a person is drunk "if, while under the influence of alcohol, he loses

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control of his faculties to such an extent as to render him incapable of safely executing his immediate duties." This definition is not unassailable, for, although the person may be under the influence of alcohol, the loss of control of the faculties may be due to other causes; further, the definition begs the question, as it has still to be decided whether the person is under the influence of alcohol. The first thing to be done is to determine whether the individual has ingested a sufficient quantity of alcohol to occasion drunkenness. This may be most important in criminal cases. That the individual's breath and clothing smell of drink is insufficient proof. Almost all symptoms which result from imbibing alcohol may also be due to other causes. The series of tests drawn up by the Medico-Legal Council of Denmark is recommended; these tests take an hour to apply; although not absolutely infallible, they will greatly reduce the chances of error. M. HAMBLIN SMITH.

Group Personality in Neurotics. (*Journ. of Neur. and Psycho-path., April*, 1929.) *Maclachlan, Douglas, R.*

The neurotic feels himself to be inferior, hence his attitude to the normal individual is tinged with jealousy. His attitude towards other neurotics is sympathetic. The neurotic's contact with reality is impaired only in that he lacks the robustness required for contact with the world around him, and that he never quite loses sight of his fears and obsessions. Work is distasteful to him. Neurotics are not very serious about the diseases which they imagine they have. The fear of insanity is, however, a constant symptom. The neurotic must have someone on whom to fix his affections; but his asexuality renders him almost incapable of sexual love. The humour of the neurotic is crude and infantile.

M. HAMBLIN SMITH.

Psychiatric Problems in Children. (*Medico-Legal Journ., May-August*, 1929.) *Bahr, M. A.*

Children who present psychiatric problems may be divided into three groups—neurotic, mentally defective, and psychotic. Neurotic children show a great variety of symptoms, which call for detailed study of the home environment as well as of the individual child. The home hygiene usually requires regulation. True hysteria may occur in children; in such cases there is usually inherent predisposition. In the neurasthenia of children there is usually a long prodromal stage. As regards mental defectives, the level of intelligence is not the only thing which has to be considered; emotional response and general output of energy are very important factors. Mental defect is the largest single cause of delinquency. As regards psychoses, mania is the insanity of early childhood; juvenile paresis is the organic insanity of childhood; classical cases of dementia præcox may occur as early as eleven years of age. After encephalitis lethargica the moral sense is more affected than the intellect. The limits of normality in childhood

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are very wide; conduct is our only guide to any evidence of mental abnormality.

M. HAMBLIN SMITH.

Case of Conjugal General Paralysis [*Un nouveau cas de paralysie générale conjugale*]. (*Soc. Clin. de Méd. Ment., July*, 1929.) *Marie, A., and Miquel.*

A man and woman, aged respectively 57 and 43 years, who had lived together for thirteen years, were brought to the asylum on the same day suffering from general paralysis. The symptoms and signs were very similar in the two cases.

W. D. CHAMBERS.

Cerebro-Spinal Syphilis at the Age of 80 [*Syphilis cérébro-spinale à* 80 *ans*]. (*Soc. Clin. de Méd. Ment., July*, 1929.) *Guiraud, P., and Le Cannu, Yv.*

The authors describe their case and refer to one or two others. They think such cases are often overlooked, being classified as ordinary dementia. W. D. CHAMBERS.

Temperament, Conflict and Psychosis in a Stone-Age Population. (*Brit. Journ. of Med. Psychol., March*, 1930.) *Seligman, C. G.*

The author deals with the inhabitants of Papua, who are still, or were recently, neolithic, and who have had extremely little contact with white people. These natives are naturally of an excitable and extravert disposition. Despite this and the frequency of suicide, both impulsive and ceremonial, there is no evidence of the occurrence of mental derangement, other than brief outbursts of maniacal excitement, among natives who have not been associated with white civilization. The author describes fatal cases of insanity in which the immediate cause was financial responsibility in connection with Europeans. In other non-fatal instances the difficulty has been in the religious field. Lately a number of religious cults have arisen which are characterized by hysterical dissociation and mass contagion, and in all except one there was evidence of the important part played by the conflict between old and new religious ideas.

G. W. T. H. FLEMING.

Conditioned Reflexes in Neuropathic States [*Les réflexes conditionnels dans les états névropathiques*]. (*L'Encéphale, January*, 1930.) *Tinel, M. J.*

This very important piece of work is a follow-up of the Pavlov method. The author rightly points out that Pavlov in his researches on the conditioned reflexes had the intention of reaching not only a more exact understanding of certain mechanisms in the animal, but also an elucidation of psychological reactions in Man. He quotes a series of ten cases, mostly psychoneurotic, obsessional, hysterical and anxiety conditions. There is in this article a hint of the attitude which is at the basis of the Déjerinian school

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of psychiatry, for the author has the feeling that the manifestations of the psychoneuroses are reflexes, and that they have been in some way conditioned at the beginning of the illness. He says it is a question of seeing whether, considered as conditioned reflexes, certain neuropathic disturbances would not appear to us more logical, more real and more easily curable than we have perhaps been in the habit of considering them in the past.

This work has an added importance in view of the fact that at the present time a considerable amount of work, not yet published, is being carried out along these lines in the United States.

W. McC. HARROWES.

Psychoses of Pregnancy, especially the Psycho-polyneuritic Korsakov Syndrome [*Des psychoses gravidiques et en particulier de la psychopolynévrite—syndrome de Korsakoff*]. (*L'Encéphale, April*, 1930.) *Dupouy, R., and Courtois, A.*

This interesting article on Korsakov's syndrome is the result of work done on mentally defective pregnant women, and the cases quoted are mentioned on account of the definite sequence of events pointing to pregnancy being to some degree the cause of the psychological manifestations. It is in effect an indication that the Korsakov syndrome is not necessarily a result of former alcoholism.

Other cases are quoted, not of the Korsakov type, melancholias, schizophrenic-like excitements, paranoid conditions.

The author notes the appearance of the Korsakov symptoms with the diminution, or even the cessation, of a hitherto uncontrollable vomiting, and this is on the basis of paresis of the phrenics secondary to the neuritic irritation. He points out that psychotic symptoms appearing towards the end of the pregnancy are for the mother a very bad prognostic sign. W. McC. HARROWES.

Dementia or Idiocy in a Child [*La démence et l'idiotie chez l'enfant*]. (*Journ. Neur. et Psych., January*, 1930.) *Decroly, O., and J.*

This paper is a detailed description of the condition of a child aged 3 years 4 months with I.Q. 40–50%. Retardation was not noticed till after the first year, and then it affected comprehension more than action. Walking began at the normal time. The authors give their reasons for thinking the case one of dementia rather than idiocy. W. D. CHAMBERS.

Feeble-mindendess in Twins [*Débilité mentale gémellaire*]. (*Soc. Clin. de Méd. Ment., July*, 1929.) *Marie, A., and Ey, H.*

Twins, aged 6 years, with a mental age of about 3, are described. The authors ascribe the condition to the effects of acute rheumatic fever in the mother during the pregnancy.

W. D. CHAMBERS.

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Mental Adultism and States of Precocious Maturity of the Personality [*L'adultisme mental et les états de maturité précoce de la personnalité*]. (*Ann. Med. Psych., April*, 1929.) *Courbon, Paul.*

This paper describes the cases of two children with the mentality and outlook of adults—a boy aged 12 years with the physique of 8 years, who lived by theft and by his wits and displayed a fully adult attitude in every way; and a girl of 14 years with the physical and mental development of a mature woman, who had lived for two years by prostitution. The cases and their ætiology are discussed. W. D. CHAMBERS.

The Precipitating Mental Conflicts in Schizophrenia. (*Journ. of Nerv. and Ment. Dis., May*, 1930.) *Gardner, G. E.*

After summarizing the views of various authors, the author gives his results from the consideration of 100 cases of schizophrenia—50 male and 50 female. Attention was paid to the possible effects that experiences productive of mental conflict may have in the disruption of the personality structure. Among the female cases the author found the following contents of the major mental conflicts manifested in the early stages of the illness: (1) Conflicts of a sexual nature, 28 cases; (2) conflicts arising from failure in occupation or life plans, 6 cases; (3) long-continued vague feelings of guilt, inadequacy and fear, 12 cases; (4) no data, 4 cases. Amongst the male cases the conflicts were: (1) Conflicts of a sexual nature, 18 cases; (2) conflicts arising from a failure in occupation or life plans, 18 cases; (3) long-continued vague feelings of guilt, fear and inadequacy, 12 cases; (4) no data, 2 cases.

Deep feelings of guilt, inadequacy and incompetency arising in connection with social contacts appear to be the most general mental states concomitant with the onset of the schizophrenic disorder, the diseases resulting in those individuals who have been endowed with the unfortunate personality make-up which is unable to accept frustration, defeat, or the censure of other human beings. G. W. T. H. FLEMING.

A Case of Encephalitic Dementia Præcox: Clinico-Anatomical Considerations [*Un cas de démence précoce encéphalitique: considérations anatomo-cliniques*]. (*Ann. Med. Psych., April*, 1929.) *Marchand, L.*

This paper describes the case of a woman who died of phthisis at the age of 44 years. Disorders of character and of the emotions developed after an acute febrile attack at the age of 3, and definite psychotic breakdowns took place at 11, 15 and 20 years. Since the last she had been constantly in an asylum, and was regarded as a typical severe case of hebephrenia. At the autopsy were found clear signs of a chronic encephalitis, including meningeal adhesions, cellular atrophy, organized thromboses, and overgrowth of neuroglia. The relationship of the undoubted encephalitis of infective origin with the dementia præcox picture is discussed, and reference is made to similar cases in the literature. W. D. CHAMBERS.

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A Case of Hystero-Katatonia; Hystero-schizophrenia [*Un cas d'hystéro-catatonie; l'hystéro-schizophrénie*]. (*Ann. Med. Psych., April*, 1929.) *Damaye, Henri.*

This paper is the description of an interesting case showing an obscure combination of hysterical and catatonic symptoms. The patient died of phthisis, and the autopsy showed the existence of a chronic encephalitis of long standing. The author is satisfied that the two syndromes of hysteria and catatonia were independently present. W. D. CHAMBERS.

A Katatonic Schizophrenic Syndrome Followed During Fourteen Years [*Syndrome schizophréno-catatonique suivi depuis quatorze ans*]. (*L'Encéphale, February*, 1930.) *Targowla, R., and Rubenovitch, P.*

There is nothing particularly original in this article, except that it is an excellent example of what may be done in stimulating interest, by the taking of careful and painstaking case-histories.

As is common in France, there is a strong tendency to explain the condition on the basis of some alteration in the patient's bio-chemical equation. W. McC. HARROWES.

Pre- and Post-Nuptial Mania [*Manies pré- et post-nuptiales*]. (*Soc. Clin. de Méd. Ment., July*, 1929.) *Courbon, P. and Manger.*

Two cases of acute mania occurring in women, one the day before, and the other a few days after marriage, are described. The patients were of different types and the ætiological factors were quite different. The effect of marriage in mental cases is briefly discussed. W. D. CHAMBERS.

Communicated Insanity [*Délire à deux*]. (*Ann. Méd. Psych., January*, 1929.) *Hyvert, M., and Perret, A.*

This paper describes the cases of a father and daughter, aged respectively 58 and 28 years, who led a secluded life together. On admission to the asylum both suffered from a very circumscribed group of delusions that the daughter was a "queen from birth," a Sacred Virgin, etc. The poverty of ideation of the daughter suggested that she was weak-minded. After a time (not stated) the daughter died, and thereafter the father improved and was discharged. References are made to the original paper on communicated insanity by Lasèque and Falret.

W. D. CHAMBERS.

Mutual Psychosis on a Mystic Theme [*Délire à Deux à Thème Mystique*]. (*Soc. Clin. de Méd. Ment., July*, 1929.) *Chiarli, A., and Dupont, M. C.*

The case reported differs from the usual in that the patients concerned had never met until they reached a mental hospital.

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Both were men of late middle life, and of quite different education and social standing. During some years of contact they elaborated a joint system of delusions and hallucinations of a mystic content, one of them, as always, being the dominant partner in the production of the morbid ideas. W. D. CHAMBERS.

Delusion and Responsibility [*Délire et responsabilité pénale*]. (*Ann. Med. Psych., December*, 1928.) *Lautier, J.*

The author was called on to give evidence in the case of a woman who stole a suit-case from a railway station. The woman had previously been under his care suffering from a persecutory delusional psychosis, without hallucinations, and had been discharged unrecovered. She was of a mean and avaricious temperament. She was still delusional, but the author testified that she was in his opinion legally responsible for her theft, and she was consequently sentenced to a month's imprisonment. A reference to similar cases in the writings of Genil-Perrin is given. W. D. CHAMBERS.

The Relative Importance of Hereditary Factors in Manic-Depressive Psychosis and Involutional Melancholia. (*Journ. of Nerv. and Ment. Dis., April*, 1930.) *Farr, C. B., Sloane, P., and Smith, L. H.*)

The authors investigated 100 cases of manic-depressive psychosis and 75 cases of involutional melancholia. They found that direct psychotic inheritance in involutional cases is only 60% of that found in manic-depressive cases. The relatives of the manic-depressive group contain a high percentage of unstable people.

G. W. T. H. FLEMING.

Manic-Depressive Psychosis as seen in Private Practice: Sex Distribution and Age-Incidence of First Attacks. (*Arch. of Neur. and Psychiat., January*, 1930.) *Paskind, H. A.*

Paskind investigated 633 cases of manic-depressive insanity, seen in private practice, for sex distribution and 615 for age distribution. The ratio of male to female was about equal. First attacks were most common in the male series between 36–40, and in the female series between 26–30. In the entire series 54·3% of first attacks occurred after 30; in the male series 66% after 30 and in the female series 43% after 30.

G. W. T. H. FLEMING.

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4. Pathology.

The Boltz Reaction in the Cerebro-spinal Fluid [*La Reazion di Boltz nel Liquor*]. (*Clinica delle Malattie Nervose e Mentali della R. Universita di Catania*, 1930.) *de Giacomo, U.*

Seventy cases were examined which suffered from various nervous and mental disorders. The author did not observe the same range of colours described by others even in hæmorrhagic, xanthochromic

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and purulent fluids. He distinguishes only two—either pale lilac with a pink tinge or an intense lilac with a blue tinge. The former constitutes a negative and the latter a positive result. In ten cases of dementia præcox the reaction was negative. In two of these a yellow developed.

The reaction was constantly positive in 22 cases of parenchymatous syphilis and in two of meningo-vascular syphilis. It was positive in two of purulent meningitis, one each of Pott's disease and myelitis and three of multiple neuritis. It was negative in one case of disseminated sclerosis. He considers that the test is not indicative of increase of protein, and that it shows, in intensity, no parallelism with the spinal leucocyte count, globulin test or the colloidal reactions. He admits that it is a debatable point whether the active substance is cholesterol or a member of the tryptophane group. He refers to the following facts:

(1) A positive result is rendered negative by the addition of sulphate of mercury.

(2) Tryptophane was present in the one case of tubercular meningitis which gave a positive result.

(3) The reaction is analogous to, but more sensitive than that of Aiella, which, in a 1/2,000 chemically pure solution of tryptophane, gives a positive result.

From these considerations and others the author regards the active substance as a member of the tryptophane group.

H. W. EDDISON.

Recent Research into the Bichromate Reaction in the Cerebro-Spinal Fluid [*Nuove Ricerche Sulla Reazione al Bicromato Potassico di Taccone nel Liquido Cefalo-Rachideo*]. (*Riv. di Pat. Nerv. e Ment., May–June*, 1930.) *Noto, G. G.*

The author is impressed by the constancy of the test, and by its greater delicacy in revealing alterations in the protein content than the tests of Nonne-Apelt and others. The reaction is, therefore, useful in dementia præcox, epilepsy and disseminated sclerosis where the changes are too slight to be demonstrated by other tests.

H. W. EDDISON.

On the Significance of the Cobalt Reaction in Urine [*Sul Significato della Reazione al Cobalto (di Boutenko) in Alcune Urine Normali e Patologiche*]. (*Bollettino della Societa Italiana di Biologia Sperimentale, February* 1, 1930.) *Gullotta, S.*

The author states that in normal urine with 3–5 grm. of phosphates to the litre the reaction is negative, but that it becomes positive when the urine contains more than 5 grm. Alkaline urines, in which triple phosphates predominate, give an immediate amorphous violet precipitate in the cold. Acid urines, on the other hand, give a precipitate only on heating. Acid phosphate of cobalt is formed, which, on heating, is converted into insoluble secondary phosphate.

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In general he regards the test as dependent upon the amount of phosphate in the urine. H. W. EDDISON.

Influence of Lumbar Puncture upon the Vegetative Nervous System [*Influenza della Rachicentesi sul Sistema Nervoso della Vita Vegetativa*]. (*Riv. di Pat. Nerv. e Ment., May–June*, 1930.) *Leanza, A.*

The author, after examining 50 cases, concluded that nearly half of them showed definite signs of depression of the sympathetic functions and stimulation of the autonomic. He advances the hypothesis that the depression of the sympathetic is due to a weakening of a reflex which normally stimulates the sympathetic, and is activated by the pressure of the cerebro-spinal fluid upon the walls of its containing cavity. H. W. EDDISON.

The Cataleptogenic Action of Somnifen [*Azione Catalettogena del Somnifen nell' Uomo in Tema di Patogenesi Amminica delle Sindromi Schizofreniche*]. (*Bollettino della Societa Italiana di Biologia Sperimentale, February* 1, 1930.) *Buscaino, V. M., and de Giacomo, U.*

Fifteen cases of dementia præcox and five of other conditions were examined. The authors found that injection of 2·2 c.c. of somnifen aggravated catatonic symptoms, and that the action of the drug is confined to this group of symptoms in dementia præcox. They consider that this action of somnifen supports the view that the mechanism of cotatonic symptoms is essentially extra-cortical. H. W. EDDISON.

Researches upon Changes in the Cholesterol and Phosphatide Content [*Ricerche Sperimentali sulle Modificazioni del Contenuto Colesterinico e Fosfatidico*]. (*Rivista Sperimentale di Freniatria, March* 31, 1930.) *De Paoli and Roncati.*

The material examined included:

1. The blood and brain of animals rendered artificially tuberculous.
2. The blood of cases of dementia præcox.
3. The blood of cases of dementia præcox presenting tuberculous lesions.

The authors showed that in (1), as regards the brain there is a deficiency of cholesterol and a marked increase in the phosphorus-containing lipoid, demonstrating a disturbance in the cholesterol-phosphatide ratio. In the blood of the same animals cholesterol is diminished out of all proportion to the phosphatides.

(2) Diminution in the cholesterol content is associated with a proportionate rise in the phosphatides.

(3) Some cases presented changes similar to those seen in the second group, while others showed a normal lipoid content.

So far as the phosphorus-containing lipoids were concerned in

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tuberculous animals, there was an increase in the brain associated with a corresponding diminution in the blood. In dementia præcox, on the other hand, there was a diminution of phosphatides in the brain and an increase in the blood. H. W. EDDISON.

Recent Researches on the Ætiology and the Pathogeny of Mental Confusion and Dementia Præcox [*Les recherches récentes sur l'étiologie et la pathogénie de la confusion mentale et de la démence précoce*]. (*L'Encéphale, January*, 1930.) *Buscaino, V. M.*

In this article the author, who is best known as the protagonist of a urinary reaction, which he suggests is diagnostic, describes the result of a histopathological investigation into the pathogeny of confusional states and of dementia præcox. He describes the appearance of racemose areas of disintegration, and suggests that these are brought about as a result of toxic activity. He says that forms of acute confusion and of dementia præcox are respectively the manifestation of the action of toxic substances of the amine type, which are formed in the intestine under the influence of certain micro-organisms, and that these are permitted to pass into the circulation as a result of lesions or of abnormality of the gastro-intestinal mucosa. He quotes Reiter, of Copenhagen, to the effect that the dementia præcox patient has some predisposition to gastro-intestinal disturbances.

The article is accompanied by a fairly extensive bibliography.

W. McC. HARROWES.

Experimental Katatonia Produced by Bulbocapnine, and the Katatonic Syndrome in Man [*La catatonie expérimentale par la bulbocapnine et le syndrome catatonique chez l'homme*]. (*L'Encéphale, February*, 1930.) *De Jong, H., and Baruk, H.*

This article is accompanied by two illustrative plates and is of considerable length. Essentially it is a comparative study of the effect of bulbocapnine and the neuro-muscular manifestations of katatonia.

1. Catalepsy.
   (*a*) Loss of ability to initiate movement.
   (*b*) Appearance of the active maintenance of imposed positions.
2. Negativism.
3. Hyperkinetic phenomena.
   (*a*) Impulsiveness.
   (*b*) Manneristic activity.
4. Organic vegetative disturbances.
   (*a*) Salivation.
   (*b*) Respiratory troubles.
   (*c*) Gastro-intestinal phenomena.
5. General signs: Epileptiform and narcoleptic seizures.

There is also a study of muscular tension from the electrical point of view.

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The conclusions are that bulbocapnine in certain doses can produce a series of symptoms corresponding to the elements of the katatonic syndrome.

The important point in this work is of course the activity of bulbocapnine in the brain-stem, interfering as it does with rubro-spinal mechanisms. W. McC. HARROWES.

The Pathogeny of the Katatonic Syndrome and Experimental Katatonia [*Pathogénie du syndrome catatonique et catatonie expérimentale*]. (*L'Encéphale, March*, 1930.) *De Jong, H., and Baruk., H.*

This is a sequel to the article in the February number and consists largely of the logical conclusions as to neurological localizations which would naturally result from the production of katatonia by a drug acting on a known locality. The headings are: (1) the organic nature of katatonia; (2) the problem of localization in katatonia; (3) the nature of the cerebral disturbances in katatonia; (4) the physiological mechanism of disturbances of motor cells in katatonia, the theory of cell discharges and psycho-motor automatism.

The article is a long and painstaking one, but it very much lacks the pathological evidence which is essential before the statements of the authors can in any way be accepted.

W. McC. HARROWES.

The Equilibrium of the Neuro-Vegetative System and of Electrolytes in the Affective Psychoses. (*Il Cervello, January*, 1930.) *Santone, M.*

Santone found that the tone of the vegetative system in anxious melancholia shows a preponderance of the sympathetic over the parasympathetic. In melancholia with agitation there is sometimes a preponderance of the parasympathetic, sometimes of both systems, and sometimes a hypotonia of the whole vegetative system. The investigation of the K-Ca equilibrium in the blood did not show any constant result. In melancholia, however, there was a certain increase of the ratio of K to Ca. G. W. T. H. FLEMING.

The Geno-Cuti-Reaction in the Insane. (*Riv. di Pat. Nerv. e Ment., April*, 1930.) *De Nigris, G.*

The author investigated this cutaneous reaction in 1,016 insane patients of both sexes. The reaction consists of the injection, on the lines of the well-known von Pirquet test, of an extract from the gonads of lower vertebrates. A positive result is shown by a whitish area more or less raised and surrounded by a reddish halo. The reaction is of varying intensity and varies with age. Cases of dementia præcox show a large number of negative or weak reactions. In manic-depressive insanity the results are not far removed from the normal. In general paralysis and epidemic encephalitis there is a high percentage of negative or weak reactions. In mental defect and in epilepsy there is also an increase in the number of negative or weak reactions. G. W. T. H. FLEMING.

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Histological Changes in the Cerebrum in a Case of Epilepsy in a Bird. (*Il Cervello, May*, 1930.) *Grimaldi, L.*

The author examined the brain of a chaffinch which was the victim of "essential epilepsy" and found the histological changes to be the same as described in the human being. There was a sclerosis of the motor area of the cortex and atrophy of Ammon's horn. G. W. T. H. FLEMING.

Atypical Serological Findings in the Reactions in the Spinal Fluid in General Paralysis Treated with Malaria. (*Riv. di Pat. Nerv. e Ment., April*, 1930.) *Cardillo, F.*

The author describes six cases of general paralysis treated with malaria during 1924–1926 in which, although there was no clinical improvement, all the reactions of the spinal fluid became negative. He thinks that this is due to an arrest of the inflammatory process. G. W. T. H. FLEMING.

Biological Reaction in General Paralytics Treated by Malaria [*Les réactions biologiques chez les paralytiques généraux traités par la malaria*]. (*Ann. Med. Psych., April*, 1929.) *Leroy and Médakovitch.*

The purpose of the authors is to discover if there is any correspondence between the clinical state of general paralytics, and the reaction of their blood and cerebro-spinal fluid during and after treatment by malaria. The tests used are Meinicke's and the Wassermann for the blood, and in addition, for the cerebro-spinal fluid, the benzoin, paregoric and Pandy tests, as well as estimation of the lymphocytes and albumen.

Ten observations are given in detail of cases during and after the malarial course, the chemical treatment given to each case being also recorded.

The authors find that the Wassermann reaction of the blood behaves irregularly. It generally weakens before that of the cerebro-spinal fluid and in impending relapse becomes positive earlier. In the cerebro-spinal fluid the cells and albumen are rapidly diminished, but the Wassermann reaction is persistent, and the presence of globulins still more resistant, though their attenuation may begin earlier. The paralytic type of curve of the benzoin test becomes like that of cerebral syphilis, and is also very persistent.

Considering similar cases of longer standing the authors quote from J. Gerstmann, who has made similar records. Their conclusions are that in *recent* cases there is no relation between the clinical state and the humoral reactions, and that the latter are of no prognostic value; but that in *older* cases the reactions, especially of the cerebro-spinal fluid, are of importance in estimating the degree of recovery or the duration of remissions. Unless the morbid reactions are completely absent relapses are to be feared, and must be guarded against by repeated observations of the cerebro-spinal

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fluid. If on examination a year after completion of treatment, in cases clinically well, the reactions of the cerebro-spinal fluid are found to be positive, a second course of malaria and specific treatment should invariably be given. W. D. CHAMBERS.

Softening in the Sylvian Area in a General Paralytic [*Ramollissement Sylvien chez un paralytique général*]. (*Soc. Clin. de Méd. Ment., July*, 1929.) *Guiraud, P., and le Cannu, Yv.*

This case is published because lesions in the brain of arterial origin are rare in general paralysis. The softening was on the surface of the right hemisphere behind the Sylvian fissure and at its deepest on the first temporal gyrus. There was no hemiplegia or aphasia.
W. D. CHAMBERS.

A Note on the Diagnostic and Prognostic Value of the Blood-Nitrogen in a Group of Cases of Acute Encephalitis [*Note sur la valeur diagnostique et prognostique de l'azotémie dans un groupe d'encéphalitiqus aigus*]. (*Soc. Clin. de Méd. Ment., July*, 1929.) *Courtois, M. A., and Russell, Mlle.*

In 16 cases of fatal febrile confusion associated with encephalitis observed by the authors, the amount of urea in the blood and cerebro-spinal fluid became rapidly and markedly increased before death. The degree of uræmia varied considerably. The authors ascribe it to a disorder in metabolism and not to a fault in the kidneys. W. D. CHAMBERS.

Temporary Changes in the Cerebro-spinal Fluid after a Convulsive Attack in Subacute Alcoholism [*Modifications transitoires du liquide céphalo-rachidien après un accès convulsif au cours de l'alcoolisme subaigu*]. (*Soc. Clin. de Méd. Ment., July*, 1929.) *Toulouse, E., Courtois, A., and Pichard, H.*

Changes in the cerebro-spinal fluid of alcoholics are rare, and the authors therefore report two cases in which they observed considerable increase in the lymphocytes following on convulsive attacks.
W. D. CHAMBERS.

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5. Treatment.

Epilepsy: Clinical Observations on the Control of Convulsive Seizures by Means of Dehydration. (*Journ. of Nerv. and Ment. Dis., May*, 1930.) *Fay, T.*

After a long and most interesting discussion of the various factors at work in epilepsy and the various theories advanced by modern writers, the author summarizes the present position. He thinks that fluid control and water balance play a large part in the cycle of the convulsive attacks; the major forms of the seizures can be modified or controlled with proper regulation of these factors.

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Each case must be considered on its merits and studied by all the means at our disposal, including encephalography. The author is convinced that the predisposing factor concerned with a major convulsive seizure is a hydration state, whether local or diffuse. Proper control of this factor by dehydration gives rise to an attack-free existence, which may continue as long as the patient's water metabolism or fluid balances remain within the limits of proper compensation. G. W. T. H. FLEMING.

The Therapeutic Effect of Dehydration on Epileptic Patients. (*Arch. of Neur. and Psychiat., May*, 1930.) *Fay, T.*

The author, continuing the work for which he is so well known, found that proper control of fluid intake, combined with dehydration, greatly diminished the tendency to convulsive seizures in certain cases representing various types of epilepsy. The generalized and stuporose phases of the attack were relieved by dehydration. This the author considers may indicate that increased amounts of supracortical fluid under specific conditions predispose the patient to a widespread effect of the precipitating stimulus responsible for the attack, and that major convulsive seizures may be in reality a superadded phenomenon not necessarily related to the basic disturbance. Dehydration was found to be very useful in controlling major convulsive seizures, and when other means of treatment had failed. There is difficulty in maintaining the strict regulation of fluid intake and in securing co-operation.

G. W. T. H. FLEMING.

Epilepsy in Adults: Results of Treatment by Ketogenic Diet in One Hundred Cases. (*Arch. of Neur. and Psychiat., May*, 1930.) *Barborke, C. J.*

One hundred adult patients, not in institutions, who were suffering from idiopathic epilepsy were treated with a ketogenic diet. In 12 cases the attacks were controlled, and in 44 the patients were definitely improved; thus 56 patients were benefited by the diet. Forty-four patients were not benefited and the treatment was considered a failure, although a number of patients were not maintained in a state of ketosis. G. W. T. H. FLEMING.

Therapeutic Properties of Sex-Glands [*Sulle Proprieta terapeutiche delle Ghiandole Germinative di Vertebrati Inferiore nei Disturbi Mentali*]. (*Rivista Sperimentale di Freniatria, liv, 2, June*, 1930.) *De Negris, G.*

The author prefers to administer opotherapeutic preparations intravenously rather than by mouth.

He has treated 21 patients of both sexes. Of these he claims that 7 recovered, 11 were improved, while 3 were scarcely, if at all, influenced.

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In his experience such treatment acts favourably upon depressive and hyperthyroid symptoms, especially in early and acute cases. He states that good results have been obtained in dementia præcox and the psychoneuroses. H. W. EDDISON.

Adrenaline in Demorphinization [*L'adrénaline dans la démorphinization*]. (*L'Encéphale, April*, 1930.) *Rojas, Nerio.*

The method is to effect a complete cessation of the taking of morphine in eight to ten days from the beginning of treatment. Towards the end of the withdrawal the author commences the administration of adrenaline in ½-mgrm. doses subcutaneously, repeated twice daily.

The treatment seems to be based on more or less empirical lines. The author discovered that certain of the withdrawal symptoms were combated by adrenaline and then attempted to work out a system of regular doses. W. McC. HARROWES.

Attempts at Proteo-pyretotherapy by Propidon [*Essais de protéino-pyrétothérapie avec le propidon*]. (*Ann. Méd. Psych., January*, 1929.) *Chiarli, A.*

Propidon is a stock vaccine containing streptococci, staphylococci and *B. pyocyaneus*. A series of injections was given to nine mental cases in increasing doses; two (melancholia and confusional psychosis) recovered. The authors do not claim that they had better results than can be obtained with milk or T.A.B. vaccine.

W. D. CHAMBERS.

Presentation of Patients Treated by Malaria-Therapy [*Présentation de malades traités par la malariathérapie*]. (*Ann. Méd. Psych., January*, 1929.) *Claude, H., Targowla, R., Cénae, M., and Lamache, A.*

The cases of 11 patients who suffered from general paralysis, more or less convalescent after treatment by malaria, are presented and discussed. The authors believe that in all favourable cases the disease can be cured by this treatment.

W. D. CHAMBERS.

Presentation of Cases of General Paralysis Clinically Cured by Malarial Therapy [*Présentation de paralytiques généraux cliniquement guéris par la malariathérapie*]. (*Ann. Med. Psych., December*, 1928.) *Fribourg-Blanc, A., and Masquin.*

During 38 months the authors treated by malaria 28 cases of general paralysis, of which 11 had complete remissions and 5 partial remissions; there were 9 failures and 3 deaths. Details of some of the cases are given. W. D. CHAMBERS.

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The Treatment of General Paralysis by Malarial Therapy Followed by a Mixed Specific Treatment in Large Doses (14 *Cases*) [*Traitement de la paralysie générale par la malariathérapie suivie d'un traitement spécifique mixte à hautes doses* (14 *observations*)]. (*Ann. Med. Psych., December*, 1928.) *Leroy, Médakovitch and Prieur, M.*

The authors have special facilities for treating general paralysis, and the cases they describe were advanced and in a serious state. Of 40 cases treated, 14 are included in the paper, the others being too recent. Of the 14, 4 are already discharged, 3 are much improved, 2 slightly improved and 1 died. The treatment adopted was as follows: Benign tertian malaria-infected blood was injected and 10 to 15 rigors allowed. Increasing doses of potassium iodide and mercuric biniodide were started immediately after the malarial attacks, combined in very feeble cases with the iodides of mercury and arsenic. At the same time a course of injections of cyanide of mercury and sulfarsenol was given, also in increasing doses. In addition, after examining the fundus, intravenous doses of sodium stovarsol (Sezary and Barbe) were given thrice weekly, alternating with injections of quinby (quinio-bismuth, Aubry).

Full details of the cases and of the technique are given, and the authors have the greatest confidence in the results of their treatment, even in seriously advanced cases of general paralysis.

W. D. CHAMBERS.

Occupational Therapy in the Treatment of Deteriorated Patients. (*Occupat. Ther. and Rehabil., June*, 1929.) *Lasche, P. G., and Rubin, H.*

Habit Training for Mental Cases. (*Ibid.*) *Wilson, Susan W.*

An unduly gloomy view is often taken of the outlook in dementia præcox cases. Occupation, in the literal sense, is a most important therapeutic measure. The patients must be kept constantly occupied; their every moment must be carefully supervised. Their autistic thinking may thus be broken through, and habits established which lead to a sense of awareness of environment. Marked mental improvement has been produced in 20% of cases. The personality of the workers is of the utmost moment.

M. HAMBLIN SMITH.

Some Results of Unguided Occupations. (*Occupat. Ther. and Rehabil., April*, 1930.) *Vaux, C. L.*

Freud has shown how universal is the use of symbols to express thoughts. The trends of the unconscious are represented in the works of the great masters. The insane, because of their released inhibitions, express their trends even more plainly. A creative urge and an urge to self-expression are often found in psychotic patients. These urges should be encouraged, but should be directed into constructive channels.

M. HAMBLIN SMITH.

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Psychological Objectives in the Physical Programme for the Mentally Ill. (*Occupat. Ther. and Rehabil., April*, 1930.). *Davis, J. E.*

The efficacy of an exercise must be judged subjectively in terms of the effect upon the individual. The tools of the therapist consist of controllable situations. He accepts the psychotic personality as it is, and attempts to evolve a form of therapy which the patient will and can accept. Forces must be organized with a view to establish participation, on the part of the patient, in some purposive activity. The swimming-bath has been found very useful for deteriorating patients; it is ideal for breaking down negativism. Competitive athletics are also of value. The true approach to the problem is through the medium of personification through play.

M. HAMBLIN SMITH.

Occupational Therapy and What it can Mean to the Sick. (*Occupat. Ther. and Rehabil., April*, 1930.) *Hinenburg, M.*

Occupational therapy is of much importance in the treatment of pulmonary tuberculosis, as assisting in the rebuilding of morale. Complete rest is the first step. When evidence of toxæmia has disappeared graduated exercises are given, and these are replaced by useful work. The ideal plan is for the patient to do the work in which he was trained before the onset of the illness. Curative workshops are preferable to the light outdoor work which is usually prescribed. The results obtained are out of all proportion to the small expense involved in maintaining the department.

M. HAMBLIN SMITH.

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Part IV.—Notes and News.

THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE EIGHTY-NINTH ANNUAL MEETING of the Association was held on Tuesday, Wednesday, Thursday and Friday, July 1, 2, 3 and 4, 1930, at the Sir William Dunn School of Pathology, near the University Museum, Oxford, by kind permission of Prof. Georges Dreyer, *C.B.E.*, M.A., M.D., F.R.S., under the Presidency of Nathan Raw, *C.M.G.*, M.D., *J.P.*, and later of T. Saxty Good, *O.B.E.*, M.A., M.R.C.S., L.R.C.P.

On the previous day, Monday, June 30, the Council and Committees met at Queen's College, Oxford, as under:

Educational Committee	10 a.m.
Parliamentary Committee	11.30 a.m.
Library Committee	12 noon.
Research and Clinical Committee	12.15 p.m.
Mental Nursing Advisory Committee	2 p.m.
Council Meeting	2.30 p.m.

Members with their guests were requested to register at the Registration Bureau at the place of meeting, and purchase Association Badges (1*s.* 6*d.* each). These had been specially designed to be of service, if necessary, at future meetings.

Official visitors, on registration, were presented with badges free of charge.

MORNING SESSION.—TUESDAY, JULY 1.

At the Sir William Dunn School of Pathology.

Nathan Raw, *C.M.G.*, M.D., *J.P.*, the retiring President, in the Chair.

1.* MINUTES.

The PRESIDENT said that the minutes of the last Annual Meeting had been published in full in the *Journal of Mental Science*. He therefore proposed that they should be taken as read and be confirmed. [**Agreed.**

OBITUARY.

The PRESIDENT expressed his regret that at each Annual Meeting it should be the President's duty to deplore the death of some of the Association's members. To-day he had to refer with sincere regret to that of several, namely, Dr. William Bevan Lewis and Dr. Sidney Coupland, both Honorary Members, and Drs. Fletcher Beach, Christopher Costello, Bagnal Harvey, Frank P. Hughes, James P. P. Inglis and Patrick O'Doherty. On behalf of the Council, suitable letters had been sent expressing the Association's regrets to the relatives of the deceased members and acknowledgements of these had been received.

2. ELECTION OF OFFICERS OF THE ASSOCIATION FOR 1930–31.

The following resolution was put from the Chair:

2 (*a*). That the Officers of the Association for 1930–31 be:

President.—Thomas Saxty Good, *O.B.E.*, M.A., M.R.C.S., L.R.C.P.

President-Elect.—Richard R. Leeper, L.R.C.P., F.R.C.S.I.

Ex-President.—Nathan Raw, *C.M.G.*, M.D., F.R.C.S.E., F.R.S.E., *J.P.*

* Numbers refer to items on the Agenda.

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Treasurer.—James Chambers, M.A., M.D.
General Secretary.—R. Worth, *O.B.E.*, M.B.
Registrar.—Daniel Rambaut, M.A., M.D.
Editors of Journal.—
J. R. Lord, *C.B.E.*, M.D., F.R.C.P.E.
Douglas McRae, M.D., F.R.C.P.E.
Thomas Beaton, *O.B.E.*, M.D., F.R.C.P.
Librarian.—J. R. Whitwell, M.B. [**Agreed.**

NOMINATED MEMBERS OF THE COUNCIL.

The following motion was put from the Chair:

2 (*b*). That the nominated Members of the Council for 1930–31 be:
Drs. R. B. Campbell, G. W. T. H. Fleming, W. J. T. Kimber, G. A. Lilly, J. Ernest Nicole, M. J. Nolan, W. Starkey.

APPOINTMENT OF STANDING AND SPECIAL COMMITTEES.

The following motions were put from the Chair:

2 (*c*). That the Parliamentary Committee, as revised by the Council, be re-appointed.
Retirement: Dr. Rothsay Stewart. [**Agreed.**

2 (*d*). That the Educational Committee, as revised by the Council, be re-appointed.
Additions: Drs. F. Douglas Turner, E. S. Litteljohn and R. Fitzroy Jarrett. [**Agreed.**

2 (*e*). That the Library Committee be re-appointed. [**Agreed.**

2 (*f*). That the Research and Clinical Committee be re-appointed. [**Agreed.**

2 (*g*). That the Mental Nursing Advisory Committee, as revised by the Council, be re-appointed as follows:
For England and Wales.—Drs. H. Dove Cormac, T. Beaton, D. F. Rambaut, F. R. P. Taylor and R. Worth.
For Scotland.—Drs. W. M. Buchanan, John Keay, T. C. MacKenzie, Douglas McRae and Prof. G. M. Robertson.
For Northern Ireland.—Drs. N. B. Graham, M. J. Nolan, W. S. Smyth and J. Watson. Retirement: Dr. W. R. Dawson.
For Irish Free State.—Drs. J. O'Conor Donelan, L. Gavin, D. L. Kelly, R. R. Leeper and O. F. McCarthy. [**Agreed.**

2 (*h*). That the Mental Deficiency Handbook Special Committee be re-appointed, with the addition of members co-opted since its appointment in 1929. [**Agreed.**

2 (*i*). That a Special Committee for the Revision of the Bye-laws be appointed, the *personnel* to be the President, Treasurer, General Secretary, Registrar, and Chairmen of Divisions, with Dr. J. R. Lord as Member and Convener. [**Agreed.**

2 (*j*). That C. F. Barham, M.A., M.D., and C. W. Bowers, L.M.S.S.A., be appointed Honorary Auditors. [**Agreed.**

2 (*k*). That the Maudsley Lecturer for 1931 be:
Sir Hubert Bond, *K.B.E.*, LL.B., D.Sc., M.D., F.R.C.P., a Commissioner of the Board of Control (England and Wales). [**Agreed.**

3 (*a*). REPORT OF THE COUNCIL.

THE Council begs to submit its 34th Annual Report as under:

At the last Annual General Meeting the criticism was made that the Annual Report of the Council was not in the hands of members until the morning of the meeting, which gave individual members no opportunity of reflecting on its contents and formulating considered views before being called upon to discuss it.

The Council has no doubt as to the justice of this criticism and feels that steps should be taken to meet it.

It is to be remembered that since 1926 the Council's Report has been a lengthy

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document which deals succinctly with the activities for the year of the whole Association. Adequate opportunity of seriously studying it will do much to stimulate and sustain the interest of members in the work of the Association. The difficulty is that the report, which is drafted by the General Secretary, and covers the period between one annual meeting and another, must be considered and approved by the Council before being issued, which under the present procedure gives no time for printing and circulating.

The Council has considered the matter very carefully and having regard to the practical impossibility of holding a special meeting of the Council for this specific purpose 21 days before the annual meeting, has decided to approve in draft the Annual Report of the Council at the May meeting, which will give adequate time for its preparation and early circulation. The final document would, of course, be approved by the President before issue. If this procedure finds favour, the proceedings at the Council's meeting which takes place immediately before the Annual Meeting would be reported verbally, as at the quarterly meetings, and subsequently included in the following year's annual report. A change in the Bye-laws will be necessary to give effect to this procedure. It is thus a matter which, if it receives the approval of members, should be referred for necessary action to the Special Committee on the Revision of the Bye-laws which the Council is recommending the Annual Meeting to appoint.

The number of members—ordinary, honorary, and corresponding—as shown in the list of names published in the *Journal of Mental Science* for January, 1930, was 819, as compared with 782 in 1929.

1928.		
60	Number of new members elected in 1929 . . .	47
782	Number of members registered in 1929 . . .	819
13	Removed according to Bye-law 17	1
15	Number of members resigned in 1929 . . .	10
11	Number of deaths in 1929	10

Members:	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
Ordinary .	640	631	676	710	694	703	700	706	727	753
Honorary .	24	25	27	30	29	30	30	31	33	35
Corresponding	9	10	13	14	16	16	15	17	22	31
	673	666	716	754	739	748	745	754	782	819

The above figures shows that there has been a gratifying increase of 53 in the number of ordinary members since the year 1926.

The annual loss by death averaged over a number of years is 13 per 1000.

About the same number usually lose their membership by failing to pay their annual subscription. This year only one member has been so dealt with.

The number of members resigning in 1929 is not more than the average.

To keep up the average number of ordinary members about 30 new members are required annually. During 1929 this was exceeded by 17.

Proposed further Revision of the Bye-laws.

The need for a periodical review of the bye-laws of a body corporate may or may not be a healthy sign. Happily in regard to our Association the former is true, for fresh activities, a widening of interests, and the desire to keep abreast of modern methods of administration give rise to this need.

At the time of the advent of the Royal Charter such a revision had been long overdue. During the war the operation of many of the Bye-laws had of necessity suspended, and since then, administrative practices not covered by the Bye-laws had been adopted to meet new departures. On June 1, 1926, a panel of members was appointed to make a preliminary survey of the situation. Besides, the Bye-laws needed rewriting to bring them in conformity with the terms used in the Charter. This latter duty was done with the assistance of the Association's solicitors. Thus there was little left to be done by the Special Committee on Bye-laws which was appointed at a special meeting of the Association on July 12 of the same year. Its report, however, dealt mainly with emergency matters, and a

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more complete revision was reserved for a future occasion. The Bye-laws thus revised were declared to be the Bye-laws of the Association on July 13, and a copy was sent to the Lords of the Privy Council for confirmation.

A step in the direction of a more thorough revision was taken on July 18, 1927, when Dr. J. R. Lord was requested by the Council to study the Bye-laws and their operation, with a view to recommending changes calculated to facilitate the work of the Association.

Dr. Lord's first report was presented to the Council on July 20, 1928, and his recommendations, after some minor emendations by a Special Committee, were adopted by the Association on the following day. A considerable amount of ground was covered on this occasion and included permission to appoint Vice-Presidents and Chairmen of Divisions and an Honorary Librarian.

This second revision was allowed by the Lords of the Privy Council under an order dated October, 1928.

The Council has now been advised by the Educational Committee that Bye-law No. 77, which deals with the appointment of Examiners is now in need of revision, in consequence of the recent increase in the number of Examiners for the written parts of the Nursing Examinations. This, and the probability of a further report by Dr. Lord, has led the Council to include in the agenda for the Annual Meeting a motion to appoint a "Special Committee of the Association of the Revision of the Bye-laws" in accordance with Bye-law 87.

It is generally recognized that the activities of the Association have considerably increased in many directions in recent years and continuity of policy is essential to their development and consolidation. At present this practically entirely devolves on the President for the year and the Honorary General Secretary, who is a more permanent officer. It is, however, to be remembered that a great deal of the time which the latter can spare to the Association is increasingly taken up with routine duties, leaving him but little time to spend on development work, and the President is commonly an extremely busy man in many directions.

Some change would therefore seem to be essential if progress and not regression is to be the sign of the future. This matter, the Council hopes, will receive earnest consideration by the Committee on Revision of the Bye-laws should the motion for its appointment be sanctioned by the Annual Meeting.

The Advancement of Research and Clinical Psychiatry.

Although the Annual Reports of the Standing Committees submitted this year deal with matters of considerable importance, yet perhaps the most interesting of them and the one likely to give members the most satisfaction will be that of the Research and Clinical Committee. As the Council is aware, the Committee is advised by a number of Special Sub-Committees upon which the bulk of the work devolves. This report contains a synopsis of the work done by each Sub-Committee during the year. Of the matters dealt with, three stand out prominently, namely, a standard method of applying the Wassermann test, the report on which has now reached its final stage after occupying the earnest attention of the Pathological, etc., Sub-Committee in collaboration with two other Sub-Committees interested since May, 1929; the comparative incidence of cancer in mental hospital patients and the general population, regarding which the Infectious Diseases, etc., Sub-Committee has recently published its first report; and congenital syphilis as a cause of amentia, being the first part of the contribution of the Mental Deficiency Sub-Committee towards the solution of the important problem of the causation of primary and secondary amentia.

All these are problems of ætiological importance, requiring fundamental research work for their elucidation. The first will greatly enhance the reliability of statistics on the many and varied manifestations of syphilis, the second may throw some light on the elusive problem of the causation of cancer. The last may foreshadow and assist that much larger inquiry which the Association, among other bodies, has for over a year been pressing the Government to set up. The solution of the problem of the causation of primary and secondary amentia will be the first step towards a really sound knowledge of the causation of mental disorders generally.

Other interesting and important matters which have been the subject of attention by the Sub-Committees are: typhoid carriers in mental hospitals, the

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occurrence of Sonne dysentery, the early diagnosis of tuberculosis, the Boltz serological test, "place in family" in cases of amentia, aërobic and anaërobic infections, epilepsy, classification of mental disorders, clinical records, etc.

Of the matters which have received the attention of the main Committee, the most important are the appointment of an Irish Sub-Committee to link up study groups in Ireland with the work of the Sub-Committees, and the encouragement of research work by the establishment of a special medal and prize, value £250, to be awarded every third year according to a scheme, the outlines of which have been considered, together with the award, by the Council and now to be put in final draft for consideration and approval by a general meeting of members should the project find favour at the Annual Meeting.

Mention should also be made of the activities of the Study Tour, etc., Sub-Committee, which continues to arrange tours for educational purposes, two of which took place during the year, namely the return visit of Dutch psychiatrists and a tour of Scottish mental institutions.

The Committee draws attention to the zeal and enthusiasm displayed by the honorary secretaries to the Sub-Committees whose attendance at meetings, all important to the business to be transacted, has been facilitated by the Council's grant of a partial reimbursement of their travelling expenses on such occasions.

The Committee also take the opportunity of appealing to medical superintendents regarding the desirability of furthering as much as possible the holding of Divisional Clinical Meetings for assistant medical officers, an appeal which the Council heartily endorses.

International and Colonial Relations.

The principal event of the year in the international relationships of psychiatry has been the holding of the First International Congress on Mental Hygiene at Washington, D.C., May 5–10.

Over 4000 persons subscribed, 3500 of whom attended the Congress, which included official representatives from fifty-three countries in all six continents. Dr. J. R. Lord represented the Association and read a message from the President. Many matters of great interest to psychiatry were discussed, and a synopsis of the proceedings by the Association's representative was communicated to the May meeting, and will appear in due course in the *Journal of Mental Science*.

The most important outcome of the Congress was the creation of a permanent International Committee for Mental Hygiene on May 6, 1930, on the Executive Committee of which a place was given to the Association's representative.

Nothing further has been reported to the Council regarding the creation of a branch of the Association in New Zealand. A further report on the attempt to form an International Association of Neurologists and Psychiatrists will be made to the Council at its next meeting.

Educational Matters.

The revision of the regulations for the training and examination of candidates for the Certificate in Mental Nursing, and of the rules for the conduct of this examination were foreshadowed in the Council's last report. The Educational Committee received a report from the Questionnaire Sub-Committee which had had under consideration a number of helpful suggestions and some criticisms emanating from the Mental Nursing Consultative Committee, and from the recognized training schools on returning the questionnaire form, and contained in a report on these replies by Dr. J. R. Lord.

This report was considered at the November meeting of the Educational Committee, and the recommendations, (slightly amended), of the Questionnaire Sub-Committee were adopted, and their incorporation in the Regulations and Rules for the Nursing Certificate were ordered to be prepared in draft for discussion at the February meeting.

The drafts, with a few amendments, were approved by both Educational Committee and Council. The occasion, moreover, had been thought opportune to submit the text of the Regulations and of the Rules to a thorough revision.

In brief the chief changes sanctioned in regard to training are (*a*) the issue of a

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list of equipment to be provided for training and examination purposes, (*b*) the institution and issue of a card recording the satisfactory performance of certain essential nursing procedures, (*c*) the requirement of evidence of at least six months' actual nursing of recent, acute and physically sick patients, and a three months' period of night-nursing.

The system of examination, which has been the subject of criticism in the nursing world, has been modernized, but with due regard to the convenience of the training schools, the special nature of the examination, and the prime importance of the character traits of the candidates. The conduct of the written examination remains much the same, but, for the oral and practical examination, areas with local secretaries will be brought into being. The previous medical coadjutors will become "Chief Examiners" and will be appointed by the Educational Committee, on the nomination of geographical local secretaries. The examination will be open to inspection by inspectors appointed by the Educational Committee and who are to be members of the Association.

The revised regulations and rules come into force in May, 1931.

Moreover it has been thought advisable to increase the number of examiners for the written examinations, which will call for emendation of Bye-law 77.

The revised regulations and rules will maintain the position the Association has for long held in respect of the education and training of mental nurses and of the care and treatment of mental patients. They have, in the opinion of the Council been wisely conceived and admirably drawn up and are not beyond the capacity of the recognized training schools, with the sanction of the local authorities, to carry out.

The nature of the replies received from the General Nursing Councils for England and Wales and Scotland in response to the Association's application for the recognition of its Nursing Certificate for State Registration was indicated in the Council's last report, but these documents had not then been considered by the State Registration of Nurses Committee. This Committee presented its report at the February meeting (Warford) 1930. The report was published in the *Journal of Mental Science*, April, 1930.

The final recommendation of the Committee that, in view of the refusal of these Councils to fall in with the resolution of the Association of November 17, 1927, the policy of the Association should be "to concentrate all its efforts towards improving and strengthening its own examinations and certificates of proficiency, so that the respect in which these are held through the English-speaking world should not diminish, and that their popularity with our nursing staff should continue," was adopted by the Council.

Such steps have, as already reported, been taken and the suggested breathing time does not seem likely to eventuate, for two other interested bodies have taken up the matter vigorously, namely, the Mental Hospitals Association and the National Asylum Workers' Union.

The former body had attempted to arrange a joint conference of that Association, this Association and the General Nursing Council for England and Wales. The last of these bodies declined to enter into such a conference, but would see the Mental Hospitals Association alone, whereupon the Mental Hospitals Association asked to meet representatives of our Association to discuss future action on this matter. Drs. J. R. Lord and W. T. J. Kimber met that Association on December 11, 1929, and a frank discussion took place. The Mental Hospitals Association's interview with the General Nursing Council took place shortly afterwards, the result being a re-affirmation of the Council's previous decision.

The latest step was a joint conference between representatives of the Mental Hospitals Association, the National Asylum Workers' Union (which at its last annual meeting had officially recognized the Royal Medico-Psychological Certificate) and our Association, which took place on April 3, 1930. Two resolutions were put forward for the observations of all three bodies. The first dealt with the sufficiency or otherwise of the Association's mental nursing certificate to qualify nurses to hold higher nursing posts, including that of Sister Tutor, and the second dealt with the advisability of establishing a national "live" register of qualified mental nurses which would be administered under the auspices of all the bodies represented at the Conference.

The second resolution was considered by the Council at its May meeting (London), 1930, and a reasoned motion, courteously expressing disapproval of the

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Association, primarily a scientific body, combining with a lay body and a trades union for such a purpose, was unanimously passed.

Discussion of the first resolution was postponed, but the Council understands now that no further action in this direction is contemplated.

Before leaving the subject of State registration of mental nurses the Council desires to record its satisfaction that the South African Medical Council has decided to continue to recognize the Association's Mental Nursing Certificate for State registration purposes, even after its own examination for that purpose has been established.

This is the outcome of correspondence between Dr. J. R. Lord and Mr. Stent, the Acting Registrar for South Africa, which the former undertook at the request of the Council in November last.

Parliamentary Matters.

The Local Government Act, 1929, came into force on April 1, 1930. The Council's last report described how the Council had, on the advice of the Parliamentary Committee, sent a memorandum to every local authority affected by the Act, offering assistance in the preparation of schemes to be submitted to the Ministry of Health for the taking over of certain services hitherto carried out by the Poor Law Authorities, and urging that the administration of mental hospital and mental deficiency services should be carried out by one *ad hoc* committee and that the opportunity offered by this transfer should be taken to provide better facilities for the earlier treatment of mental disorders. Several local authorities responded and were advised on the lines of the Association's expressed policy.

A point which was at that time causing some anxiety to members was whether schemes might be accepted by the Ministry which would virtually transfer mental hospital and mental deficiency services to the public health authorities, as this seemed quite possible under the Act. The matter was, however, cleared up on the introduction of the Mental Treatment Bill on November 19, 1929, which made provision for the appointment of visiting committees to carry out that Act and the Lunacy Act, except the power of raising a rate, etc. The Council hopes, however, that some machinery will be created whereby all the medical services of a local authority can be kept in close touch with each other, in order to bring psychiatry more in the stream of general medicine for their mutual benefit, a policy long advocated by many members of the Association.

The Council would again impress on the local authorities the necessity of creating or supplementing provision in their areas for the treatment of cases of mental disabilities of a minor, yet often distressing kind, which are the cause of much invalidism and inefficiency and may, though not necessarily so, be preludes to serious mental disorder if the sufferers are not properly advised and treated. The Association in general meeting assembled in Edinburgh, 1927, expressed its view vigorously to the British Medical Association that such services should be directed by experienced psychiatrists, whether they were drawn from public services or not.

The matter is of such vast importance in the prophylaxis of mental disorder that the Council hopes members will keep a watchful eye on developments in their areas for the information of the Council, and has advised the Divisions accordingly.

It will be remembered that the Council, at its meeting in July, 1928, requested the Parliamentary Committee to review the recommendation of the Association in regard to certification, provisional order, etc., in the light of the report of the Royal Commission, and if necessary submit recommendations. The Parliamentary Committee responded by re-appointing the Sub-Committee to which had been referred the latter report, to go into the matter. No report was issued, but the entire subject was discussed at a session of the last Annual Meeting. The opening paper by Dr. J. R. Lord, after appearing in the Journal, was widely circulated to Government and local authorities, as the views expressed in it were in the main endorsed by the meeting.

The Government solution of the problem as to how far the law might be altered to allow of persons being detained for mental treatment without judicial intervention came to light on November 18 last, when the Mental Treatment Bill, 1929, was introduced in the House of Lords. This Bill was an advance

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on the recommendations of the Royal Commission in that it recognized "non-volitional" cases and made special provision for their temporary care and treatment in mental institutions without certification if likely to benefit thereby. The principal Act was left undisturbed in regard to "unwilling" cases. Provision was also made for the admission of voluntary cases to public mental hospitals, the latter provision being optional and the former compulsory on all local authorities.

The Association's policy therefore, both as expressed in its evidence before the Royal Commission and during the discussion at the last Annual Meeting was in this regard adopted by the Government, a fact which gave the Council and Parliamentary Committee great satisfaction.

The Parliamentary Committee at once appointed a Sub-Committee to report on this Bill and to watch its passage through Parliament with powers to act if it thought necessary. It was to work in close touch with a similar body appointed by the British Medical Association.

This Special Sub-Committee met several times, and though approving generally of the Bill took exception to certain of its provisions and issued a temporary report in respect of them and took all the steps necessary to bring its views before Parliament. A joint meeting with the Lunacy and Mental Disorder Committee of the British Medical Association took place on Monday, January 27, 1930, and the Sub-Committee's views were endorsed by that Committee.

The next step was to impress the joint report of these two bodies on the medical members of Parliament and representatives of both were most courteously received at the House of Commons on Tuesday, February 25, 1930—Drs. J. R. Lord and R. Worth representing the Association.

The final report of the Sub-Committee was submitted to the Parliamentary Committee at the February meeting (Warford), 1930, and with a few amendments was approved by the Committee and later by the Council. The full text of the report appeared in the *Journal of Mental Science*, April, 1930.

A fair measure of success has attended the efforts of the Association to have the Bill, which as a whole showed a welcome advance in the treatment of mental diseases, amended in the right direction. The Council feels that the thanks of the Association are due to those members of the Parliamentary Committee who gave so much of their time and energy to this matter.

On the Notice of Motion paper of the House of Commons for Tuesday, December 17, 1929, appeared:

"Mr. Remer.—Nurses Registration Act (Amendment).—A Bill to enable nurses possessing the Royal Medico-Psychological Association's certificate to be registered as mental nurses." The motion was later postponed until February in order that the Council might meet and consider it before introduction. It is doubtful whether the Bill was ever printed, in any case it has not been found possible to obtain a copy, so no action could be taken.

The Nursing Press at once assumed that the Bill was backed by the Association, but withdrew the assertion and expressed its regrets when put in possession of the facts.

The benefit to the Parliamentary Committee of having a Parliamentary Agent has been very clearly demonstrated since Mr. S. Sully was first appointed in February, 1928. He was re-appointed in 1929 and again this year. The Council endorses the views of the Parliamentary Committee that a permanent office of this kind should be created and hopes that the Association will take the same view.

The Library.

In consequence of the repeated complaints of the Library Committee as to the unsatisfactory accommodation afforded at the British Medical Association House, the Council in 1928 appointed a Special Committee to inquire into the whole question of the housing of the Association.

The efforts of the General Secretary to get in touch with the person most concerned failed for one reason or another, it was just before the July meeting (London), 1929, that Dr. J. R. Lord, acting for the General Secretary, sought and obtained an interview with Mr. Ferris Scott, who supplied all the desired information as to the accommodation which would be given the Association when building operations, etc., were completed. These facts were communicated to the Library Committee and Council. The site of the room proposed for the Library with

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other accommodation were afterwards visited and approved, and a further report to be made in 12 months' time. It had always been clearly understood that the room allotted to the Library would be reserved for the Association's use only.

The Hon. Librarian, however, has since been given to understand that such entire reservation was never intended.

The matter came up again at the May meeting (London), 1930. The Association's occupancy dates from January, 1926, the annual rent being £80 a year, £5 less than that previously paid at 11, Chandos Street, London. Unfortunately the original correspondence in 1925–26 has been mislaid by both Associations and cannot be referred to in order to settle the question in dispute. The Council on being apprised of these facts appointed another Committee with practically the same reference as the previous Committee, and the matter will be further gone into and a report to the Council presented in due course.

The Journal of Mental Science.

The *Journal of Mental Science* continues to maintain a primary position among psychiatric journals. It is conducted by voluntary labour and can thus be produced at a low cost considering the value of its contents.

The projected monograph on "Chronic Sinusitis in Mental Disorders" is likely to be published during the coming year.

The Editors express their thanks to Dr. Alexander Walk for his valuable services as Assistant Editor.

The Mott Memorial Book.

Of the 500 copies printed of the Mott Memorial book ready for sale, under 100 remain unsold. Appreciative reviews are still coming in and sales are steadily proceeding.

The Council in February took over from the publishers the financial responsibility. The book has therefore become the property of the Association.

The Nursing Badge.

This Badge, founded at the Annual Meeting (Wakefield), July 11, 1928, was made available to nurses registered by the Association, in July, 1929.

Honours.

The Council heard with pleasure of the appointment of the Rt. Hon. Hugh Macmillan, K.C., to the high post of Lord of Appeal in Ordinary and Member of the Judicial Committee of the Privy Council. Subsequently Mr. Macmillan was raised to the peerage under the title of Lord Macmillan of Aberfeldy.

Lord Macmillan was elected an Honorary Member of the Association in 1928 in recognition of the great services he rendered to psychiatry as Chairman of the Royal Commission on Lunacy and Mental Disorder, 1924, and for the assistance he has since rendered to the cause of mental hygiene on many occasions. The Council on hearing of his preferment directed a letter of cordial congratulations to be sent him, to which Lord Macmillan replied in gratifying terms.

Obituary.

Honorary Members: Bevan-Lewis, William, M.Sc.Leeds, M.R.C.S., L.R.C.P. Lond.; Coupland, Sidney.

Members: Beach, Fletcher, M.B., F.R.C.P.Lond.; Branthwaite, Robert Welsh, *C.B.*, M.D.Brux.; Costello, Christopher, M.B.; Harvey, Bagenal Crosbie, L.A.H. Dubl.; Hughes, Frank Percival, M.B., B.S.; Inglis, James Pringle Park, M.D.; O'Doherty, Patrick, B.A., M.B.

NATHAN RAW, *President.*
R. WORTH, *General Secretary.*

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REVENUE ACCOUNT—January 1st to December 31st, 1929.

1928.	Dr.	Expenditure.	£ s. d.	£ s. d.
£ s. d.				
1416 19 7	To	Journal—Printing, Publishing, Engraving, Advertising, and Postage	1219 5 4	
1730 1 9	,,	Examinations, Association Prizes, and Clerical Assistance to Registrar	1802 2 11	
24 1 8	,,	Petty Disbursements, Stationery, Postages, etc.	23 8 9	
428 7 10	,,	Annual, General, and Divisional Meetings ...	400 16 8	
80 0 0	,,	Rent of Premises and care of Offices	80 0 0	
12 12 0	,,	Audit and Clerical Assistance	12 12 0	
437 8 3	,,	Miscellaneous Account	158 9 3	
—		Library Expenses, 1927–1929	176 12 5	
—		Special Research Fund—Grant	50 0 0	
				3923 7 4
624 9 3		Balance		971 1 9
4854 0 4				£4894 9 1

1928.	Cr.	Income.	£ s. d.	£ s. d.	£ s. d.
£ s. d.					
	By	Dividends—General		386 18 4	376 14 4
	,,	Sale of Journal	262 10 0		301 0 10
	,,	,, Handbook	105 14 0		117 15 0
	,,	Statistical Forms, etc.	4 9 5		5 15 8
	,,	Advertisements	28 12 10		23 19 5
				401 6 3	
	,,	Fees for Certificates of Psychological Medicine ...		2905 9 6	2839 0 4
	,,	,, Certificates of Proficiency in Nursing ...			
	,,	Subscriptions		1186 15 3	1179 13 6
	,,	Interest on Deposit		13 19 9	10 1
				£4894 9 1	£4854 0 4

BALANCE-SHEET—31st December, 1929.

1928.	Liabilities.	£ s. d.	£ s. d.
£ s. d.			
479 0 3	To Journal Account, balance of	390 14 9	
65 9 3	,, Meetings Account, balance of	57 19 7	
40 0 0	,, Rent Account, balance of	40 0 0	
27 0 6	,, Miscellaneous Account, balance of	7 5 3	
145 13 6	,, Gaskell Account Dividends	160 0 8	
6 7 6	,, ,, ,, Income Tax, etc.	3 14 0	
171 18 4	,, Maudsley ,, Dividends	181 11 6	
21 2 0	,, ,, ,, Income Tax	21 2 0	
20 4 0	,, Dividends ,, Income Tax	22 12 0	
1301 7 9	,, Examinations Account, balance of ...	1,393 7 11	
13 10 7	,, Asylum Workers' Convalescent Fund ...	7 10 7	
5 0 0	,, Research Fund	44 10 0	
25 0 0	,, Library Account, balance of	—	
5 1 6	,, Petty Disbursements, balance of	—	
			2330 8 3
2,326 15 2			
11,004 1 5	Balance as at 1st January, 1929 ...	11,811 10 3	
624 9 3	Add Balance as per Revenue Account ...	971 1 9	
248 18 7	,, Increase in Value of Investments	—	
14,264 4 5			
125 19 0	*Deduct:* £ s. d.	12,782 12 0	
—	Subscriptions written off ... 23 16 9		
	Decrease in Value of Investments 580 8 8		
		604 5 5	
			12,178 6 7
£14,138 5 5			£14,508 14 10

1928.	Assets.	£ s. d.	£ s. d.	£ s. d.
£ s. d.				
	By Lloyds Bank :—Bankers		999 2 4	782 3 7
	,, Deposit Account, General		400 0 0	400 0 0
	,, ,, ,, Interest due		13 19 9	15 4 10
	,, Sales Account, balance of		14 10 0	10 17 6
	,, Subscriptions Account, balance of		319 14 3	271 8 3
	,, Library Account, balance of		88 14 6	169 9 9
	,, Fees Account, balance of		1805 9 6	1739 0 4
	,, Stocks, value at this date:			
	£634 8s. 3d. New Zealand, 3½ *per cent.* Stock, 1940 ..		539 5 0	558 5 7
	£320 14s. 8d. Ditto, ditto (Hack Tuke)		272 12 6	282 5 0
	£103 7s. 2d. Victoria, 3 *per cent.* Stock, 1929–49 (Dr. Paul)		68 4 4	73 7 7
	£213 18s. 1d. Manchester Corporation, 3 *per cent.* Stock...		130 9 8	139 9 8
	£405 18s. 1d. New South Wales, 3½ *per cent.* Stock, 1930–50		284 2 6	308 9 8
	£386 0s. 0d. London, Midland and Scottish Railway, 4 *per cent.* Pref. Stock		270 4 0	283 14 2
	£1864 1s. 2d. War Loan, 5 *per cent.* Stock, 1929–47 ...		1868 14 4	1915 6 4
	£9072 1s. 3d. Conversion Loan, 3½ *per cent.* Stock ...		6736 0 2	7189 12 2
	£900 0s. 0d. Ditto, ditto (purchased in 1929) ...		697 12 0	—
			£14,508 14 10	£14,138 5 5

(*Signed*) JAMES CHAMBERS, Hon. Treasurer.
(*Signed*) DUJARDIN, BOLT & Co., Incorporated Accountants, Empire House, E.C. 1.

G. F. BARHAM
CEDRIC W. BOWER } Hon. Auditors.

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MAUDSLEY BEQUEST.

1929.	Dr. Expenditure.	£	s.	d.
Feb. 15.	To Cash—Income Tax	21	2	0
June 15.	„ „ University College Refectory	1	6	0
„ 15.	„ „ „ „ (Lantern)		4	6
July 9.	„ „ Postages		10	0
Sept. 2.	„ „ Lecturer's Honorarium ...	52	10	0
„ 4.	„ „ Adlard & Son	6	4	6
Oct. 18.	„ „ „ „	14	2	6
Dec. 31.	„ Amount owing—Income Tax ...	21	2	0
„	„ Balance (Dividends)	181	11	6
		£298	13	0

1929.	Income. Cr.	£	s.	d.
Jan. 21.	By Balance (owing)	21	2	0
Jan. 1.	By Balance (Dividends)	171	18	4
June 1.	„ Cash—Half-year Dividend on War Loan	52	16	4
Dec. 2.	„ „ „ „ „	52	16	4
		£298	13	0

GASKELL FUND.

1929.	Dr. Expenditure.	£	s.	d.	£	s.	d.
Feb. 15.	To Cash—Income Tax ...				3	14	0
April 13.	„ „ Solicitor's Fees				2	13	6
July 9.	„ „ W. A. Mussett					5	0
Aug. 1.	„ „ Prize				30	0	0
Oct. 1.	„ „ Examiner's Fees and Expenses				16	19	0
Dec. 31.	„ Amount owing—Income Tax ...				3	14	0
„ 31.	„ Balance (Dividends)				160	0	8
					£217	6	2

1929.	Income. Cr.	£	s.	d.
Jan. 1.	By Balance (owing)	6	7	6
Jan. 1.	By Balance (dividends)	145	13	6
„ 1.	„ Cash—Half-year Dividend on New Zealand 3½ *per cent.* ...	19	6	7
Apr. 2.	„ „ Half-year Dividend on New South Wales 3 *per cent.*	4	1	0
June 1.	„ „ Half-year Dividend on War Loan	9	5	0
July 1.	„ „ Half-year Dividend on New Zealand 3½ *per cent.* ...	19	6	7
Oct. 1.	„ „ Half-year Dividend on New South Wales 3 *per cent.*	4	1	0
Dec. 2.	„ „ Half-year Dividend on War Loan	9	5	0
		£217	6	2

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Dr. R. WORTH (General Secretary) read the report and moved its adoption.

Dr. MENZIES (Cheddleton), in seconding, said it was a splendid report, and members ought to feel very grateful for it. He wondered whether a review of it could appear in the public press, so that the doings of the Association could receive a little more publicity than was usual.

Dr. J. R. LORD (Horton) said he would bear Dr. Menzies' suggestion in mind.

The PRESIDENT referred to the good work done for the Association by Drs. Worth and Lord, who had been sharing the duties of the General Secretary, there being far more work than one could overtake. Dr. Worth had been in office for a very long time and members were grateful to him for all the valuable work he did for the Association. (Loud applause.) [**Agreed.**

3 (*b*). REPORT OF THE TREASURER.

The Treasurer submits the Revenue Account and Balance-Sheet for 1929, also the Financial Statement of the Maudsley Bequest and of the Gaskell Fund. £900 3½% Conversion Loan was purchased for the Association.

Two grants of £3 each were made from the Asylum Workers' Convalescent Fund—thus leaving a Credit Balance of £7 10*s*. 7*d*.

J. CHAMBERS,
Hon. Treasurer.

Dr. CHAMBERS read this Report and moved its adoption.
Dr. LORD seconded. [**Agreed.**

3 (*c*). REPORT OF THE EDITORS.

The Editors beg to submit their Annual Report for the year 1929.

The appended table shows the cost of production of the Journal under various heads.

It will be seen that though the total cost of production of each Journal has fallen by 6*d*. the cost to the Association, *i.e.*, less credits, has only fallen ½*d*.

The lowering of cost of production is due principally to the 76 fewer pages in 1929 as compared with 1928. This cost would have been lower still by £16 17*s*. 4*d*. but for the insertion (by request) of the replica of the Honorary Nursing Certificate presented to H.R.H. Princess Mary, Countess of Harewood.

The Editors believe that the Journal maintains a satisfactory position among psychiatric Journals. Considering its size and the number of plates and figures and tables, the reason why it can still be produced so economically is simply because it is conducted by voluntary labour.

The Journal has now reached its average size again and no further expansion can be expected without a higher subscription. It is regrettable, however, that the Editors have to refuse many valuable contributions from foreign countries. The Journal is conducted not only for the furtherance of psychological medicine, but for the encouragement of young psychiatrists whose papers merit publication. To omit such in favour of perhaps more mature writings from abroad would not be in accordance with this practice.

The year 1929 has been an eventful one for psychiatrists. Owing to their preoccupation the reviewing of books suffered, though the Epitomes numbered 370, and exceeded by two the high level of the previous year.

Work has been resumed on the Monograph on "Sinusitis in Mental Disorders," and its publication may be expected in the coming year.

The Editors cannot close this report without a word of thanks to reviewers and epitomizers, whose work is so carefully and adequately done and is of great educational value to readers. The Editors would be grateful for further assistance, especially in the reviewing of books.

Dr. Alexander Walk has amply justified his appointment as Assistant Editor, and has considerably lightened the work of the Editors.

J. R. LORD.
DOUGLAS MCRAE.
T. BEATON.

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Analysis of Cost of Journal 1928 and 1929.

1928. £ s. d.	£ s. d.		1929. £ s. d.	£ s. d.
796 19 4		Printing of text	758 3 9	
68 3 10		Illustrations	45 2 0	
83 11 8		Paper for text	79 5 0	
42 9 8		Cover and advertisements	47 2 6	
76 7 9		Binding	71 15 6	
	1,067 12 3			1,001 8 9
97 8 11		Reprints	87 4 2	
11 10 0		Wrappers	8 15 1	
51 5 1		Dispatch	51 4 4	
	160 4 0			147 3 7
6 9 0		Stationery	8 13 0	
35 19 9		Postage and Index	26 6 9½	
	42 8 9			34 19 9½
41 15 0		Publishers' Fees	41 11 3	
	41 15 0			41 11 3
	£1,312 0 0			£1,225 3 4½
		Credit.		
317 9 8		Sale of Journal, etc.	266 12 0	
23 19 7		Advertisements	28 12 10	
	£341 9 3			*£295 4 10

* Exclusive of £1 16s., credits for Sale of *Clinical Study of Mental Disorder*.

Cost of Journal.

1928.		1929.
6s. 1d.	Cost of production of Journal per copy	5s. 7d.
4s. 3d.	Cost to Association of Journal per copy	4s. 2¼d.
926	Size of Journal in pages	850

Dr. LORD read the report and moved its adoption.
Dr. MCRAE seconded. **[Agreed.**

The PRESIDENT said he had a motion to submit which, he did not doubt, would be carried by acclamation. He considered that the Association owed a special debt of gratitude to Dr. Lord and his co-Editors for the enormous amount of work they had put in for the benefit of the Association. All were very glad to get and to read the Journal. It contained the most complete epitome of recent psychiatrical and allied literature he knew, which was a great attraction. He knew also that Dr. Lord devoted a lot of his time and energy annotating, reviewing and conducting the enormous correspondence his editorship entailed, this meant persistent night-work and curtailment of rest and recreation. The reason members were able to have such a journal and that it could be purchased at such a price was that the labour put into it was entirely voluntary. Members, he felt quite sure, would wish to express their gratitude for all that was done by Dr. Lord and his colleagues. (Loud applause.) **[Agreed.**

3 (*d*). REPORT OF THE HONORARY LIBRARIAN.

(*Vide* Report of the Library Committee.)

3 (*e*). REPORT OF THE HONORARY AUDITORS.

We, the undersigned, having examined the Treasurer's books, and having duly compared and scrutinized receipts and vouchers, hereby certify that the Accounts and Balance-Sheet, as set forth, represent a true statement of the Royal Medico-Psychological Association's finances for the year 1929.

G. F. BARHAM
CEDRIC W. BOWER } *Hon. Auditors.*

Dr. C. W. BOWER read the report of the Auditors and moved its adoption.
Dr. LORD seconded. **[Agreed.**

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3 (*f*). REPORT OF THE REGISTRAR.

The entries for the May, 1930, Examination exclusive of South African candidates, whose return is not yet to hand, were as follows:

Preliminary Examination.—Nursing, 2,134; Mental Defective, 191; total, 2,325.

Final Examination.—Nursing, 1,598; Mental Defective, 158; total, 1,756. Grand total, 4,081.

Compared with the number of entries for the May, 1929 Examinations, there were 25 less in 1930; the entries for the Final Examination were greater by 200 than in 1929, but the Preliminary entries were less by 225. The entries for the May, 1929, Examinations were a record.

The following is a detailed statement, giving the number of entries from each class of institution, the number of passes, and the percentages for the May, 1930, Examinations:

Preliminary Examination.

Class of Institution.	Entries.	Passes.	Percentages.
English County Mental Hospitals	1,276	880	68·96
English Borough Mental Hospitals	266	163	61·27
Registered Hospitals and Licensed Houses	107	78	72·89
Scottish Mental Hospitals	345	242	70·14
Irish Mental Hospitals	140	73	52·14
Mental Defective Institutions	191	142	74·34
Totals	2,325	1,578	67·87

The total percentage of passes to entries in this Examination is greater by 10·43 than in the May, 1929 Preliminary Examination.

*Final Examination.**

Class of Institution.	Entries.	Passes.	With distinction.	Percentage of— Passes.	Dists. to Entries.	Dists. to Passes.
English County Mental Hospitals	912	595	68	65·24	7·45	11·42
English Borough Mental Hospitals	196	110	7	56·12	3·57	6·36
Registered Hospitals and Licensed Houses	111	52	1	46·84	0·90	1·92
Scottish Mental Hospitals	225	93	2	41·33	0·88	2·15
Irish Mental Hospitals	154	35	1	22·72	0·64	2·85
Mental Defective Institutions	158	86	2	54·43	1·26	2·32
Totals—Nursing	1,598	885	79	55·38	4·94	8·92
Totals—Mental Defective	158	86	2	54·43	1·26	2·32
Grand total	1,756	971	81	55·29	4·61	8·34

The percentage of passes to entries is less by 4% than in May, 1929, and the percentage of distinctions is 2·5% greater.

The whole of the results—both Preliminary and Final—were despatched to the various institutions by June 5 for the preliminary, and by June 16 for the final. This is easily a record.

There was no case of a candidate being disqualified for breaking the rules of the examination.

The examination for the Gaskell Gold Medal and Prize was held at Wakefield Mental Hospital on May 30 and 31. There were two candidates. The Examiners (Prof. Shaw Bolton and Dr. Devine) awarded the Prize and Medal to Dr. G. W. T. H. Fleming, of Dorset Mental Hospital, Dorchester.

The President awarded the Bronze Medal to Dr. Duncan Macmillan, of Crichton Royal Institution, Dumfries, and the Divisional Prize to Dr. G. E. Shand, of Winson Green Mental Hospital, Birmingham.

* Amended since Annual Meeting.

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I ask the Committee to recommend the Council to grant me a small increase of remuneration for clerical work. All the recent improvements in the conduct of the examinations cause more work. I have had to pay more for clerical work than I am allowed. I suggest an increase of £35 per annum.

DANIEL RAMBAUT,
Registrar.

Dr. D. F. RAMBAUT read this Report and moved its adoption.

Dr. F. R. P. TAYLOR seconded. [**Agreed.**

The PRESIDENT said the Association had just listened to an excellent Report from Dr. Rambaut, showing that the state of the Nursing, Education and Training service was splendid. Here was another fine example of voluntary labour. He feared it was not usually recognized what a tremendous amount of labour Dr. Rambaut put in for the Association. He was sure the members of the Association, realizing this, felt very grateful to him, and hoped he would continue in his post for a very long time.

3 (*g*). REPORT OF THE EDUCATIONAL COMMITTEE.

The Educational Committee begs to submit the following report for the year ending June 30, 1930.

Four meetings have been held.

The number of candidates who presented themselves for the Nursing Examinations (exclusive of South African candidates) during the year was:

Mental Nursing.—Preliminary: 3,411. Final: 2,363.

Nursing of Mental Defectives.—Preliminary: 271. Final: 213.

The South African candidates numbered:

Mental Nursing.—Preliminary: 283. Final: 130.

Nursing of Mental Defectives.—Preliminary: 39. Final: 18.

A Mental Deficiency Handbook Committee has been appointed by the Association in accordance with the recommendation of the Educational Committee.

In November revised Regulations for the Training and Examination of candidates for the Certificate of Proficiency in Mental Nursing and revised Rules for the Conduct of the Examination were approved.

These included a Schedule of Equipment for the Practical Examination and a "Card for Practical Instruction." A certificate that the nursing procedures set out on the card have been satisfactorily carried out by each candidate will be required before entry for the Final examination.

For the purposes of the oral and practical part of the examination England has been divided into a number of "examination areas," for each of which an Area Examination Secretary has been appointed. He, in conjunction with the Registrar and the Medical Superintendent of each Institution, will make arrangements for the oral and practical examinations.

Scotland and Ireland each form one "examination area."

Under the revised regulations the visiting medical examiner becomes the Chief Examiner and the Superintendent of the hospital becomes a Coadjutor.

Under the new conditions a freer interchange of visiting examiners is possible, and it is anticipated that a more uniform standard for the examination will be obtained.

The Educational Committee wish to place on record its appreciation of the services of Medical Superintendents at the examinations in the past. Without the help of the Superintendents it would have been impossible to carry on the examination with such success. The general preference of mental nurses for the Association's Certificate is due to the essential fairness and suitability of the examination, and the comparatively moderate fees—conditions largely dependent on the assistance given by Medical Superintendents.

The Committee believe that in the interests of the Association's Certificates and of the education and training of mental nurses the same assistance and co-operation, which has been so ungrudgingly given in the past, will still be forthcoming.

An increase in the number of examiners for the written portion of the Preliminary and Final Examination in Mental Nursing was made during the year. While formerly there were three medical examiners for each examination and three nurse

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examiners for the final, in future there will be five—one selected from each division of the Association.

The following institutions were approved during the year:

Brentry Certified Institution (for male nurses only), in Section "C" of the Syllabus, Training Mentally Defective Adults, for those nursing mental defectives.

Great Barr Park Colony, for those nursing mental defectives (on the appointment of a Sister-Tutor).

The Gaskell Gold Medal and Prize was awarded to Dr. G. W. T. H. Fleming, of Dorset Mental Hospital, Dorchester.

The Association's Bronze Medal was awarded to Dr. Duncan Macmillan, B.Sc., of Crichton Royal Institution, Dumfries, and a Divisional Prize to Dr. G. E. Shand, of Winson Green Mental Hospital, Birmingham.

F. R. P. TAYLOR, *Chairman.*
W. J. T. KIMBER, *Hon. Secretary.*

Dr. W. M. BUCHANAN (Bothwell) read the Report and moved its adoption.

Dr. LORD seconded.

[**Agreed.**

3 (*h*). REPORT OF THE PARLIAMENTARY COMMITTEE.

The Parliamentary Committee begs to submit the following report for the year ending June 30, 1930. Five meetings have been held during the past year, and these have been well attended.

Dr. H. G. L. Haynes was appointed Hon. Secretary of the Committee at the November, 1929, meeting, *vice* Dr. G. W. B. James, resigned. The principal work of the year has been the consideration of the Mental Treatment Bill, 1929, which received its final reading on June 20, 1930, and now awaits the Royal assent.

A special Sub-Committee appointed to see the Bill through Parliament, suitably amended, consisted of Drs. Nathan Raw, F. R. P. Taylor, J. Greig Soutar, J. R. Lord, E. Mapother, R. Worth, Prof. G. M. Robertson and the Secretary of the Committee. It held several meetings, and also a conjoint one with the Lunacy Law Committee of the British Medical Association. Many negotiations took place between this Sub-Committee, the Ministry of Health, and the Medical Committee of the House of Commons, with the result that changes considered desirable by the Sub-Committee were finally embodied in the Bill. These changes are all summarized in the *British Medical Journal* supplement of June 21, 1930, p. 278. The report of the Sub-Committee presented at a special meeting of the Parliamentary Committee on January 17 was finally approved by the Council on February 4, 1930.

This report was published in the April number of the *Journal of Mental Science.* The Committee found the assistance of Mr. F. Sully, the Parliamentary agent, of the greatest value, and are glad to announce his re-appointment by the Council for a further period of five years. Other subjects that have received attention during the year have been the Nurses' Registration Bill and the report of the Departmental Committee upon the superannuation of Local Government officers.

NATHAN RAW, *Chairman.*
H. G. L. HAYNES, *Hon. Secretary.*

Dr. H. G. L. HAYNES read this Report and moved its adoption.

Dr. J. GREIG SOUTAR seconded.

[**Agreed.**

3 (*i*). REPORT OF THE LIBRARY COMMITTEE.

The Library Committee begs to submit the following Report for the year ending July, 1930:

During the past year the Library has maintained its usefulness. There has been a slight increase in the number of books in circulation amongst members, and the usual periodicals have been sent round as they are issued. The presentations and additions have been noted and recorded in the Journal.

The books of the Association have never been so well housed, nor so fully indexed for reference. However satisfactory this may be, we have to record that

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the room in which the Library is now situated is used for other purposes than our own; moreover, it is not kept in a clean and proper condition, and other persons than members of our Association have means of access to it.

Another matter, which gives a considerable amount of inconvenience, is the fact that there is no switch for artificial light in the room, and the Hon. Librarian has always to ask an official of the British Medical Association if he would kindly unlock the door of the room in which the switches for the electric light are kept. This is clearly a very irksome and intolerable arrangement, seeing that owing to the structural peculiarities of the Library, there are very few days upon which no artificial light is necessary.

J. R. WHITWELL, *Chairman.*
COLIN MCDOWALL, *Secretary.*

3 (*j*). REPORT OF THE CLINICAL AND RESEARCH COMMITTEE.

The Research and Clinical Committee begs to submit the following report for the year ending July, 1930:

Annual Meeting.

The Committee has met four times during the year, *viz.*, on July 9, 1929, November 5, 1929, February 3, 1930, and May 21, 1930.

Advisers in Bio-Chemistry.

In July, 1929, Capt. S. A. Mann, B.Sc., F.I.C., was appointed Hon. Adviser in Bio-Chemistry to the Committee.

J. H. Quastel, D.Sc., Ph.D., has expressed his willingness to assist in the work of the Pathological, Bacteriological and Bio-Chemical Sub-Committee, and will be present at its meetings.

Encouragement of Research.

Considerable attention has been given to the stimulation of research work in psychological medicine and germane subjects, especially since the Gaskell Medal and Prize is not now available for this purpose. The matter was referred to a Sub-Committee who recommended:

(1) That a special prize and gold medal be awarded triennially for research on mental and nervous disorders or on any condition bearing on them.
(2) That the minimum award should be £250.
(3) That the award should not be limited to members of the Royal Medico-Psychological Association.
(4) That three assessors be appointed to decide as to the value of such research with power to consult an expert adjudicator.

These recommendations were approved and forwarded to the Council for consideration. The Council referred the Report to the Treasurer for his views on the financial aspect of the scheme, with the result that the Council expressed approval of the expenditure of £250 every third year in support of the scheme and requested the Committee to submit its proposals in a final form to the Association at a general meeting.

An Irish Sub-Committee.

An Irish Sub-Committee, with Dr. P. Moran as Hon. Secretary, has been appointed to establish and administer Research and Clinical Study Groups in Ireland, and to link up these activities with those of the appropriate existing Sub-Committee.

Pathological, Bacteriological and Bio-Chemical Sub-Committee.

Standardizing the Wassermann test.—During the course of the year two meetings of this Sub-Committee have been held in conjunction with the General Paralysis, Mental Deficiency and Encephalitis Sub-Committees. The important work, begun in May, 1929, of standardizing the Wassermann reaction in mental hospitals

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and bringing the test into line with that employed by the Ministry of Health has been continued.

On September 26, 1929, a meeting of the Sub-Committees was held at Horton Mental Hospital. The Second Report by Dr. W. M. Ford-Robertson was read and discussed and considerable progress was made. Col. L. W. Harrison, of the Ministry of Health, was present and gave valuable advice on various technical points. It was agreed that Capt. Mann, who was present, should collaborate with Dr. Wyler of the Ministry of Health Laboratory with the object of clearing up any differences in respect of technique, and that he should make a report on the results of this collaboration.

On May 21, 1930, a meeting of the Sub-Committee was held at the British Medical Association House, London—again in conjunction with the three other Sub-Committees. The third and final report was presented and, with the exception of a few minor details, was unanimously adopted. The report will be published in due course in the Journal and afterwards issued in pamphlet form. The hope was expressed that mental hospital serologists would use this uniform and reliable complement-fixation method, which has the advantage of meeting the special requirements of psychiatry with the added usefulness that results will be comparable with those of the Venereal Disease Centres.

The Boltz serological test.—Steps have been taken to interest the mental hospital laboratories in the Boltz test of the cerebro-spinal fluid with a view to the issuing of a special report on the subject. It is requested that information relating to this test should be sent to Dr. C. J. Thomas, of the Lancaster Mental Hospital Laboratory, who published an interesting paper on the test in the *Journal of Mental Science*, April, 1930.

The bio-chemistry of the normal nervous system.—Immediately the activities of the Sub-Committee are freed from the standardization of the Wassermann test, it is intended to form a special research group on the bio-chemistry of normal nervous tissue. For this purpose Dr. Eric Gordon Holmes of the Pharmacological Laboratory, Cambridge, has been specially invited to join the Sub-Committee. It is felt that more should be known about this subject before any real progress can be made in the bio-chemical investigation of the abnormal. The Sub-Committee is fortunate in having several members who could co-operate with Dr. Holmes, and it is hoped will do so.

Aërobic and anaërobic bacteriological methods.—The value of pursuing both these methods in the laboratory investigation of cases of psychotic reaction to chronic infection and toxæmias was well demonstrated in a paper read by Dr. W. M. Ford-Robertson at a Clinical Session of the last Annual Meeting, and it is satisfactory to note that two more hospital laboratories have joined the group. The Committee would like to remind members that copies of the Sub-Committee's Research Epitomes can be had on application to the Hon. Secretary.

General Paralysis Sub-Committee.

As already reported, this Sub-Committee has been occupied in the consideration of the Wassermann test, and until this matter is concluded no further progress can be made in the matter of the creation of a national register of cases of general paresis. A return to this and other important matters, and a close examination of the report by Surgeon Rear-Admiral Meagher on the treatment of this disease by induced malaria, will be made.

There is also awaiting the consideration of this Sub-Committee further important work which is in progress at the Malaria and General Paralysis Research Centre (Ministry of Health) at Horton Hospital, especially in regard to the use of quartan strains.

Epidemic Encephalitis Sub-Committee.

There have been no special activities of this Sub-Committee during the year except its association with the Pathological Sub-Committee in the matter of the Wassermann test.

The scheme of research promulgated by this Sub-Committee, despite its great importance, has met with financial and administrative difficulties. It is hoped that in due course these will be overcome. In the meantime the Committee is considering the advisability of incorporating the reference to this Sub-Committee

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in that to the Pathological, etc., Sub-Committee, or *per contra*, of its continuance in case there should be any new developments in regard to this disease which call for special inquiry.

Mental Deficiency Sub-Committee.

One meeting has been held during the year, apart from those in conjunction with the Pathological Sub-Committee, but much work has been done.

Congenital syphilis in amentia.—Wassermann blood tests have been carried out on almost 1000 patients at the Manor Certified Institution for Defectives, and the Sub-Committee is much indebted to Dr. T. Lindsay for doing this work.

The following are the results up to date: (The figures quoted should be considered as approximate evaluations.)

(1) *The incidence of the reaction in the cases of amentia examined.*—The blood-serum of 939 cases was examined and a positive reaction found in 115 (12·2%).

(2) *The intensity of the reaction in the cases of amentia examined.*—In 96 of the 115 cases the strength of the reaction was plus 30 and under; in 10 it was plus 60; and in 7 plus 120; and in 2 plus 480.

(3) *The relation of the presence of the reaction to the sex of the patients examined.*—440 of the cases examined were males and of these 45 gave a positive reaction: of the 499 females 70 were positive. Amongst the males 10·2% gave a positive reaction, whilst amongst the females 14% gave a positive reaction.

(4) *The relation of the presence of the reaction to the age of the patients examined.*—143 cases were under 16 years of age, and of these 22 (15·4%) were positive: 219 cases were over 16 and under 20, and of these 27 (12·3%) were positive; 497 cases were over 20 and under 30, and of these 59 (11·9%) were positive; of the remainder, namely 80 over 30 years of age, only 7 (8·8%) were positive.

(5) *The relation of the reaction to the degree of amentia*—107 feeble-minded, 830 imbeciles, and 2 idiots were examined (*i.e.*, 2 gave an I.Q. under 25, 830 an I.Q. of 25–50, and 107 an I.Q. of 50–75 on the Terman scale). Of the feeble-minded 14 (13%) were positive; of the imbeciles 99 (11·9%) were positive, and neither of the idiots was positive.

(6) *The relation of the reaction to the clinical varieties of amentia examined.*—
1. Of the 16 mongols examined all were negative.
2. All 5 cases of hydrocephalus were negative.
3. Of the 2 cretins both were negative.
4. Of the 52 epileptics 11 were positive (21·1%).
5. Of 28 cases of amentia with paralysis 3 were positive (10·7%).

Arrangements have at last been made for obtaining blood specimens for control purposes from normal children of approximately the same social class. The Committee sanctioned the expenditure of £25 by the Mental Deficiency Sub-Committee to meet travelling expenses incurred in connection with this work.

Place in family and amentia.—Some 3,000 copies of a questionnaire on "Place in Family" have been circulated to mental deficiency and mental institutions, and it is hoped to show from the information received whether this factor has any bearing on defect.

The diagnosis of congenital syphilis.—Dr. R. M. Stewart's paper on "The Clinical Diagnosis of Congenital Syphilis," published in the *Journal of Mental Science*, July, 1930, has been sent out to all the large mental deficiency institutions with the request that the case-book entries might be made on the lines suggested in the paper. It will now be made available in pamphlet form for wider circulation Dr. Stewart's paper is a most painstaking and comprehensive summary of our knowledge on the subject and is deserving of high commendation.

Infectious Diseases Sub-Committee.

This Sub-Committee has met twice during the past twelve months.

Cancer research.—At the meeting held in November, 1929, the Statistician's report upon the replies received to the questionnaire on cancer were read and discussed. This, the first report on this important and promising research, appeared

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in the *Journal of Mental Science*, April, 1930. Dr. A. Pool, of Rainhill Mental Hospital, kindly consented to allow a paper written by him, and dealing with the incidence of cancer in that mental hospital, to be published in association with the Sub-Committee's report. This is of interest as affording an opportunity for comparing the figures in the Sub-Committee's report, which refer to the incidence of cancer in mental hospitals throughout England and Wales, with those in Dr. Pool's paper, which deals with a particular mental hospital.

The report concludes by observing that "for the period 1920–1928, the death-rates from all causes in the 72 mental hospitals, as compared with those among persons aged 15 years and upwards in the general population of England and Wales, were as 79 : 13 (or six times as high); while a similar comparison of cancer death-rates shows that they were in the proportion of 306 : 176 (or less than twice as high). It appears to be a likely field for investigation as to how far the lower proportion in the mental hospitals of deaths assigned to cancer is explainable by the very heavy death-rates in these institutions from other causes, such as general paralysis and tuberculosis."

Further investigations will follow after communication with other interested bodies.

Typhoid carriers in mental hospitals.—Dr. A. A. W. Petrie has completed his report upon the "carrier" question in mental hospitals, and it is hoped to publish it shortly

The prevalence of Sonne dysentery.—The prevalence of Sonne dysentery in certain mental hospitals has given rise to some anxiety. At the request of the Committee the Infectious Diseases Sub-Committee undertook to obtain information upon the subject. A questionnaire on the Sonne bacillus was sent to 35 mental hospitals interested in bacteriological work. At the May meeting the Hon. Secretary reported that he had received 29 replies, and hopes to present a detailed report upon the subject at the next meeting.

The early diagnosis of tuberculosis in mental hospitals.—At the May meeting of the Sub-Committee a special discussion took place on the use of the complement-fixation test in the detection of cases of tuberculosis in mental hospitals. The idea had been to work this test in conjunction with the Wassermann test, but it was felt that it would be more satisfactory to await the Pathological Sub-Committee's report on the standardization of the Wassermann test.

The Committee, conscious that preventable tuberculosis is still a reproach to the administration of mental institutions, is anxious to indicate a reliable test for early tuberculosis, easy of practical application, so that isolation of infected patients can be effected at the earliest possible moment.

Clinical Psychiatry Sub-Committee.

One meeting of this Sub-Committee has been held during the year. Financial difficulties, now happily solved, were largely the cause of this failure to meet more often. Nevertheless some work has been done.

Epilepsy.—The response to the questionnaire on epilepsy has been disappointing. A supplementary letter was sent out in Spetember, 1929, further explaining the purposes of the questionnaire and pointing out that negative information was as valuable as positive. So far, out of some 350 copies sent out, only 31 have been returned. A further report will be made available in due course.

Classification of mental disorders.—The report on the classification of mental disorders should appear in the autumn.

Clinical records.—The above remarks also apply to this work.

Mental abilities in the abnormal.—With regard to the research suggested by Prof. C. Spearman in his Maudsley Lecture, this matter was brought up at the meeting in November, 1929, and it was resolved to write to various mental hospitals and ascertain their willingness to receive research workers under the scheme. We are pleased to report that active work is in progress at two centres—the Maudsley Hospital and Horton Mental Hospital.

Actinotherapy Sub-Committee.

No meeting of this Sub-Committee has been held during the year. The Medical Research Council was communicated with in regard to the Sub-Committee's reference and the Council expressed the view, through Sir Hubert Bond, Chairman of its Mental Disorders Committee, that mental hospitals could provide a first-rate

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field for research into the value of actino-therapy in selected physical conditions, and that it should not be difficult to secure the co-operation of, say, six or eight mental hospitals. Sir Hubert also expressed the view that it was desirable for his Committee to operate through this Sub-Committee.

Following this, Dr. Chevens was seen by Sir Hubert Bond, Sir Walter Fletcher and Dr. Bourdillon and they asked for records of the work during the past year: What type of mental case benefited most by this form of treatment, and whether there would be any objection to a full-time worker travelling from one mental hospital to another to co-ordinate results. A circular letter was sent to all members conveying this information and asking for replies. Eleven mental hospitals have expressed their willingness to co-operate. The Medical Research Council has been informed of this and a further communication is now awaited.

Psychotherapy and Psycho-Pathology Sub-Committee.

During the past twelve months the Sub-Committee has met once, but very active work has been in progress. The Sub-Committee's influence is being widely felt through the great activity of its Hon. Secretary, Dr. J. Ernest Nicole.

Study groups.—Study groups in London and Lancashire hold regular meetings. Notwithstanding repeated efforts no headway has been made towards establishing a study group in Yorkshire.

Research groups.—At the Autumn Meeting of the Midland and Northern Division held on October 24 at Hatton Mental Hospital, Dr. Chevens outlined a scheme of work of a research group on the relationship of heredity and suicide. He pointed out that there were various theories which might account for the actual mechanism of the suicidal attempt, but did not explain the deeper factors underlying that mechanism. The value of such a research was the subject of comment in a recent report of the Board of Control (England and Wales).

Other research groups are working, but no results can be published at present

Current literature.—The Psycho-Pathological References for 1928 were printed and distributed with the *Journal of Mental Science*, October, 1929, and those for 1929 will be distributed with the July number, 1930. In connection with the International Congress of Mental Hygiene held at Washington, assistance was given in the compiling of the British Library of Mental Hygiene.

A book on Psycho-Pathology.—Largely in response to suggestions made by members of the Sub-Committee, Dr. Nicole has written a book, shortly to be published, affording students a short, concise summary of the present approaches to psycho-pathology.

Study Tours Sub-Committee.

Study tours.—Since the last Annual Meeting the Sub-Committee has carried out two study tours: one for our Dutch colleagues in September, 1929, to mental hospitals and mental deficiency institutions in England, of which an account by Dr. A. Edward Evans appeared in the *Journal of Mental Science*, April, 1930; the other being a visit to several mental hospitals, mental deficiency institutions and laboratories of psychology and pathology in Scotland during the first fortnight in June, 1930.

On each of these tours the members of the parties were received with the most cordial hospitality and took away lasting impressions of work of great value.

Vienna Courses in Neurology and Psychiatry.—Announcements have been circulated by the Sub-Committee relating to two intensive courses in psychiatry and neurology in Vienna. At the request of the Sub-Committee Dr. Henry Harris wrote an article on "A Psychiatric Visit to Vienna," a copy of which was sent to every mental institution in Great Britain and Ireland.

The International Congress of Mental Hygiene, Washington, D.C.—The holding of the International Congress of Mental Hygiene at Washington on May 5–10, 1930, together with the tours of mental institutions arranged in connection with that Congress were the subject of special circulars in collaboration with the National Council for Mental Hygiene.

The Sub-Committee had already projected a study tour in America and this seemed a convenient opportunity to effect it. A few members participated and enjoyed their visit immensely.

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Correspondence relating to the organization of further study tours and to other post-graduate educational facilities is actively maintained.

Clinical Meetings.

The Scottish and Irish Divisions hold their Clinical Meetings at the same time as their Divisional Meetings. An account of them is always published in the *Journal of Mental Science.*

The sad death of Dr. Tighe, the energetic Secretary of the Northern and Midland Division, deprived the Association of a keen supporter of these meetings. In 1928 eleven were held and in 1929 four. One has been reported for 1930.

Difficulty was experienced in dividing the South-Eastern Division for the purpose of holding Clinical Meetings, but this was ultimately solved, except in respect of one large area in which the mental hospitals were few and widely scattered. A commencement was made at Horton in 1929, and only the great pre-occupation of the Organizer, the Chairman of this Committee, has prevented more than one other (Leavesden Mental Hospital, December 13) being held since. Two more are projected at an early date.

No Divisional Clinical meetings have been reported to the Committee from the South-Western Division since 1928.

The Committee desires to point out that it was never intended that these meetings should be more than informal gatherings of small groups of assistant medical officers, with such local practitioners as could be induced to come at the invitation of the medical superintendent, who (or his deputy) would preside.

Such meetings are not limited to members of the Association. They are initiated by the Divisional administration, and their proceedings reported in the *Journal of Mental Science.*

Invitations are sent to the medical staffs of convenient groups of mental hospitals through the medical superintendent, who is asked to give leave of absence to as many as possible of his medical officers for this purpose.

The Committee desires the good offices of medical superintendents in this movement for the advance of psychiatry.

Acknowledgments.

In this report the activities of the Honorary Secretary of one Sub-Committee has been mentioned, but it must not be thought that others, in similar positions, are not equally deserving of mention. One of the principal objects of the resuscitation and reorganization of this Committee in 1926 was to interest and encourage junior psychiatrists, by giving them an appropriate share in the work of the Association and an opportunity to show their abilities and worth in the specialty.

That the psychiatry of the future will be in the hands of the juniors of to-day, is a fact that places great responsibility on the Association now.

The fine work done so willingly and enthusiastically by these honorary secretaries is a witness to the wisdom of the action taken by the Association in 1926.

The Committee desires to place on record their great appreciation of the way Honorary and Corresponding Members have responded to its appeal for co-operation in current psychiatric literature, especially our Dutch and Italian colleagues.

The Chairman of the Committee, during his recent visit to the United States of America, came to an arrangement with Dr. George K. Pratt, Assistant Medical Director of the National Committee for Mental Hygiene, to supply the Committee monthly with current literature collected specially for the purpose from all over America. The Chairman undertook to see that it would be appropriately distributed in this country and the arrangement has already come into operation. The Committee very much appreciates Dr. Pratt's kind action.

In conclusion the Committee desires to express its thanks to all those who have assisted in its labours and for the generous support received from members generally. Particularly is it grateful to the Council for the assistance given the honorary secretaries in the matter of expenses incurred in attending meetings. This action will greatly facilitate the work of the Sub-Committees.

J. R. Lord, *Chairman.*
B. H. Shaw, *Hon. Secretary.*

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Dr. B. H. SHAW (Stafford) read this Report and moved its adoption.

Dr. LORD seconded.

The PRESIDENT said members would agree that this was a very valuable Committee, and was doing excellent work. He hoped its enthusiasm would continue unabated. (Applause.) [**Agreed.**

4 (*a*). REPORT OF THE MENTAL DEFICIENCY NURSING HANDBOOK COMMITTEE.

The Mental Deficiency Handbook Committee begs to present its first annual Report as follows:

Meetings were held in October, December and April last. It is proposed that the Handbook shall be a volume of 13 chapters with an introduction. Part of it will be adapted from the existing Handbook, and the remainder written specially. Drafts of the introduction, Chapters 1 to 5, and Chapters 11 to 13 have been distributed to members of the Committee, and a draft of Chapters 6 to 8 will be sent them in the near future. Chapters 9 and 10 are in course of preparation.

The time has arrived for negotiation with the publishers, Messrs. Baillière, Tindall & Cox. This firm has been selected because it has supplied the necessary material from the *Handbook for Mental Nurses*.

On behalf of the Committee I shall be glad of formal authority from the Association to deal with the matters of detail which will arise in getting the book ready for issue.

E. B. SHERLOCK, *Chairman*.
W. J. T. KIMBER, *Hon. Secretary*.

Dr. WORTH read this Report and moved its adoption.

Dr. LORD seconded. [**Agreed.**

4 (*b*). REPORT OF THE MENTAL NURSING ADVISORY COMMITTEE TO THE GENERAL NURSING COUNCILS.

Dr. LORD said that the Committee as regards England and Wales had not been called upon to do any work during the year.

[**Received.**

5. MOTIONS INVOLVING EXPENDITURE OF FUNDS (BYE-LAW 93).

The PRESIDENT said the next items were three motions involving the expenditure of funds. The first was a grant of £50 for the Library Committee.

The second was a grant of £250 out of revenue every third year to be given to institute a Special Medal and Prize for Research.

Dr. J. GREIG SOUTAR said the position was that the Council approved the granting of this sum for the purpose described, but no particulars of the scheme had been circulated. While they agreed to the general principle, they would still require to know details, and he understood that the Committee would submit particulars of the scheme to a general meeting before the money was available.

Dr. J. R. LORD replied that the scheme only required finishing touches. Then it would be considered at a general or a special meeting. If such a meeting approved the scheme, the money voted at that annual meeting would be available.

Dr. W. F. MENZIES pointed out that this was to be open to the world, and was not to be restricted to members of the Association.

Dr. SOUTAR said that was one of the points he had in mind.

Dr. LORD seconded the proposal that the grant be given.

The PRESIDENT said that, as he understood it, the meeting approved of the general principle of every third year awarding £250 for the best research work, open to the world, and that a scheme was to be submitted by the Research and Clinical Committee.

Dr. SOUTAR said that was not decided, *i.e.*, as to whether it was to be open to the Association or to the world. Until the members had had that brought before them, the final decision as to making this grant did not arise.

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The PRESIDENT said the meeting must approve the general principle of spending the £250.

Dr. SOUTAR rejoined that he agreed with that, provided there was also approva of the scheme. [**Agreed.**

The President said he wished to express his own feelings—and he was sure they were the feelings of members generally—of appreciation of the immense amount of work which the Hon. Treasurer did, despite his poor health of late. It was a great pleasure to see him fit and well again, and he hoped Dr. Chambers would long continue in that state. (Applause.)

6. DATES OF THE QUARTERLY MEETINGS OF THE ASSOCIATION AND OF THE COUNCIL.

These had been fixed provisionally for November 25, 1930 (subject to consultation with the Maudsley Lecturer), February 25, 1931, May 21, 1931.

7. ELECTION OF HONORARY, CORRESPONDING AND ORDINARY MEMBERS. [Bye-laws 3, 4, s. 15.]

Honorary Members.

Dr. J. R. LORD said: It is again my privilege to submit the names of those whom the Nominations Committee and the Council deem worthy of election, some as Honorary, some as Corresponding Members. In furtherance of this duty, I shall put before you the claims that entitle each candidate to be so honoured. I feel that to deal at all adequately with the deeds of men who are held in high esteem, some the world over, in psychology and other sciences or who have dedicated themselves to the treatment of mental affections, will be no light undertaking. I essay the task confidently, however, because I am sure of my facts, and I am equally sure of your sympathy in my efforts to lay the facts clearly before you.

Prof. Harvey (Wm.) Cushing.

The submission of the name of Harvey Cushing, *C.B.*, A.M., LL.D., Sc.D., M.D., M.Ch., F.R.C.S.(England and Ireland), Professor of Surgery, Harvard University, for election as an honorary member of an association devoted to psychological medicine, causes one to pause and to think and inquire what is it that leads to the selection of any one out of the wealth there are of men deserving the highest honour it is in the power of the Association to bestow? The first consideration undoubtedly is individual merit. This must be outstanding. The second is, not to delay too long the honour due for some great achievement, and then endure the regret of a posthumous recognition. The third is stated in our Diploma of Honorary Membership: " Persons in whatever country in the world." The last is, to remember that psychological medicine is dependent on progress in other departments of knowledge. Such knowledge is the material with which we repair or from time to time re-build our psychiatric edifice. Thus psychological, anatomical, physiological, pathological and bio-chemical methods dominate modern psychiatry.

Now, it is just such a message Harvey Cushing has for the world of medicine. As the leading neurological surgeon in the world, he has served to break down the old barriers between pure medicine and pure surgery in the fight against disease.

In three matters in particular has Harvey Cushing's work been of great moment to psychiatry:

(1) *The third circulation and its channels.*—His mastery of the problem of the cerebro-spinal fluid as to its origin and circulation has taught us that the Galenic conception of ebb and flow, which till 1925 largely held the field in text-books, was not in accordance with fact. The Harveian conception of a circular flow applied here as in the case of the system of arteries and veins.

Harvey Cushing's interest in the third circulation and its channels* led him

* Others papers on the subject have appeared in 1908, 1911, 1914, 1915, 1920, 1922 and 1923.

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to write on the subject, for the first time, in 1901. His work has illuminated the cause and treatment of hydrocephalus and other cerebral diseases, and made cerebro-spinal medication practicable.

(2) *Investigation on the pituitary—"the hypophysis cerebri."*—Then in regard to the revelations by the experimental method in the physiology and pathology of the pituitary gland, who has done more fundamental work.

(3) *The surgery of intracranial tumours, particularly the gliomas.*

These were the subjects he selected for his Cameron Lectures, delivered in 1925, the first being a tribute to the memory of François Majendie who, a hundred years ago, drew attention to the peculiar watery medium which bathed the central nervous system.

These lectures* alone showed that Harvey Cushing had a rightful place in the line of succession of previous Cameron lecturers—Pasteur, Lister, Ferrier, Horsley, Manson, Ross, Ehrlich, Flexner and others, whom the world accepts as famous in experiment and research.

His interest in cerebral surgery and cerebral tumours commenced about the year 1902, and his papers have appeared practically every year since. "Tumours of the Nervus Acusticus" was the title of a paper which appeared in 1917. In June, 1922, he delivered the Cavendish Lectures on "Meningiomas." His latest contribution, dated 1928, was a book (in conjunction with Mr. Percival Bailey) on *Tumours Arising from the Blood-Vessels of the Brain.* He turned his attention to the pituitary gland in 1906. A book entitled *The Pituitary Body and its Disorders*, appeared in 1912.

Of his other contributions to physiology, pathology and surgery I feel I need make no comment, as surely those alone entitle him to the honour proposed to-day.

Apart from these triumphs of research, Harvey Cushing, besides being a man of science, is well known to us for his learning, his humour, and his literary talents.

I would remind you of his "Life" (published in 1925) of Sir Willian Osler, his great colleague and friend—a book which should be read by all young medical graduates. Cushing's admiration for Osler is almost parallel with that of Boswell for Johnson, and in this work he did for Osler a similar service.

Harvey Cushing was born in Cleveland, Ohio, in 1869, and was educated at Yale University, where he took an Arts degree in 1891. The next five years were spent at Harvard, where he qualified M.D. in 1895. He was Associate Professor in Surgery at the Johns Hopkins University from 1902 to 1912. Since then he has occupied the Chair of Surgery at Harvard University, and has been Surgeon-in-Chief to the Peter Bent Brigham Hospital. His great achievements have led to honours being showered upon him in many lands besides America; the Universities of Yale, Washington, Belfast, Western Reserve, Cambridge, Glasgow, Jefferson, Dublin, have all recognized him. He was elected an Honorary Fellow of the Royal College of Physicians of England in 1913, and of Ireland in 1918, and was President of the American College of Surgeons in 1922. He has been created a Companion of the Bath and Chevalier of the Légion d'Honneur. In 1923 he was made President of the American Neurological Society, and President of the American Surgical Association in 1927. Many foreign medical and scientific societies have been proud to enrol him among their honorary members. From an early stage in the war he rendered great service to the British, and afterwards to the American armies in France. He did some wonderful war surgery, and wrote a valuable paper on the subject. For fourteen days in 1922 he held the post of Surgical Director at St. Bartholomew's under a scheme of exchange visits which originated at the Peter Bent Brigham Hospital, Boston, U.S.A. His illustrious ties with this country are many and now I ask you to add yet another one, for we have received from him treasures of knowledge.

Prof. Pierre Janet.

For years it was a matter of surprise to me that the name of Pierre Janet, M.D., Member of the Institute of France (Académie des Sciences morales et politiques), Professor of Psychology at the College of France, Director of the *Journal de*

* The lectures were afterwards published in book form under the title of *Studies in Intracranial Physiology and Surgery.*

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Psychologie normale et pathologique, did not appear on our roll of Honorary Members. I well remember with what despair, in the early '90's, we faced our functional cases. How were we prepared for the task, by even the greatest of our teachers? We were warned not to expect much success, that only eugenics and education could provide a real remedy, and then only after two or three generations. The pathology of mind of that day taught that the real causes were to be found in molecular conditions of the nerve element, which dislocated function —a pure surmise. We knew also—though it was little more than the educated layman knew—that mental breakdown often seemed to be consequent on shocks, worries and anything that might wear out body and mind. But in many cases we knew full well that this did not apply. With as much optimism as we could muster, we set out to heal the disordered mind. All we did was to relieve our cases from physical handicaps and suffering. In successful cases, time, the great consoler, and efficient nursing did the rest. We could still say with Esquirol, who wrote these words in 1835, that "Pathology is silent as to the seat of madness." Then, about the year 1900, news came of Pierre Janet, the harbinger of hope, the founder of the first school of psycho-pathology. But it was not until *The Major Symptoms of Hysteria* appeared in 1908 that a full appreciation of his work was possible. He brought us nearer our patients, gave us the beginning of an insight into the how and why of the abnormal mental state; we began to view our patients from a new angle. He made us feel that the diseased mind demanded scientific investigation, as did physical illness. We began to learn that no iota of past experience was ever really lost. Janet first (as did Breuer and Freud, too) taught us the importance of subconscious experiences persisting as motive forces more or less powerful for good or evil. The fact that experience and the building up of a personality began at birth acquired a new significance. All depended on the thoroughness with which this creative work was done. We could liken many of our patients to the men who struggled up the Hill of Difficulty loaded with ball and chain. That the burden was invisible to them became to us the all-important point. If insight could be given them, they might cast away the burden. The application of psychological methods to psychiatry was largely the outcome of Janet's study of hysteria and automatic states of mind. His conception of the sub-conscient, his theory of mental "dissociation" and of the "re-association" by which the mind recovered equilibrium, marked the beginning of a new era in psychiatry. It cast a light on the nature of mental disorders. Janet was truly a pioneer in descriptive clinical analysis. His work reveals a remarkable insight into psychical phenomena. By pointing out that the origin of the physical signs in hysteria was mental, he showed that the fundamental machinery of mind was mental and not physical, which also suggested that physical symptoms of mental fatigue might originate in mental causes. This was the forerunner of Breuer and Freud's "conversion" or "substitution."

Janet taught that hysteria is an innate weakness of mental function, a molar dissociation of the mind, due to an imperfect synthesis of the personality permitting of groups of ideas to lapse into the sub-conscient where they have an independent existence and function apart from the rest of the personality. Thus he saw the anæsthesia in hysteria was due to loss of attention.

Janet's conception of psychasthenia—a clinical entity—was that it is a molecular dissociation of the personality due to a lowering of psychological tension. The patient loses touch with reality from diverted attention, shown in doubts, fears, imperative ideas, indecision, obsessions, impulses and compulsions, together with emotional depression, agitation and psychic crises.

According to him neurasthenia was merely physiological exhaustion.

Janet was the descendant of the school of mental therapeutists to which belonged Charcot, Liébault, Bernheim, Vanbeneden, Forel and Dubois. Dubois practised re-educative methods.

Charcot taught that a morbid idea might give rise to hysterical symptoms which could be influenced by hypnotism. This linking up of hysteria and hypnotism made a psycho-pathology possible and was Janet's opportunity, for Charcot's work opened the gates to rich pastures.

The school of psycho-analysis of Vienna followed methods of inductive reasoning, and its adherents were broad thinkers and generalizers. The scientific revolution in psychology due to Janet was extended by Freud into character study, educational psychology, race psychology, child study and folk-lore. Though Janet

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in 1913 took up a critical attitude to Freudianism, Breuer and Freud had, as early as 1895, supplied the cause of dissociation in their theory of psychic traumas.

It must be conceded that Janet's views were more static than dynamic. Janet's psychology was intellectualism and sensationalism. He believed in a passive stream of mental elements which were either molar or molecular. McDougall points out, however, that latterly a change to the dynamic point of view has been indicated.

So great an explorer of the mind of man commands our admiration, and his name I hope will now find a place in our roll of honorary members.*

Prof. Julius R. Wagner von Jauregg.

One comes across the names of many great neurologists, pathologists and psychiatrists when tracing the history of general paralysis from its recognition by Bayle to the present time. Of these we would make special mention of Esmarch and Jesson, who first suggested that general paralysis had a syphilitic origin; Wassermann, whose serological test has done so much in diagnosis; Noguchi, who demonstrated the presence of the spirochæte in the brain of these cases; and lastly, Hofrat Professor Dr. Wagner von Jauregg, who cured the disease. Him we hail to-day as one who has rendered signal service in the treatment of the insane.

Wagner von Jauregg has had a distinguished career as a pathologist and clinical psychiatrist. Pupil, in Vienna, of von Bamberger, an eminent clinician, and of the pathologist Stricker, he commenced his teaching career in 1883 at the Vienna psychiatric and neurological clinic. In 1893 he became Professor of Psychiatry in Graz, and then returned to the Vienna clinic as Professor and Director. As a physician he has done great work in both prophylaxis and healing. As a research worker his field has been thyroid disturbances, general paralysis, tabes, cerebro-spinal syphilis, the anatomy of the nervous system and cerebral circulation, all these in addition to mental diseases and psychology from the biological point of view.

In prophylaxis he is renowned for his method of preventing the occurrence of goitre.

In treatment he devised, after persistent inquiry over a number of years, the treatment by induced malaria which could cure general paralysis, provided cases had not gone on to grave organic changes, with destruction of nerve-cells in psychic and psychomotor areas of the brain. For this great work he was in 1927 awarded the Nobel Prize in Medicine.

He has many other claims to the honour now proposed. His clinic is one of the most active research centres in neurology and psychiatry. He has gathered around him as brilliant a team as can be found anywhere. And in this respect there occur to me the names of von Economo, A. Piltz, Rivak, Neumann and Gerstmann. He has also written a text-book, and is one of the Editors of the *Year Book of Psychiatry*. Last March he attained the age of 73 years, of which 43 have been devoted to clinical psychiatry.

If the Association had a Hall of Fame, surely somewhere in it would be the busts of Harvey Cushing, Pierre Janet, and Wagner von Jauregg.

Corresponding Members.

I have now to mention the names of the Corresponding Members proposed. Such members were originally intended to help the Editors to keep abreast of foreign psychiatry. They are now active supporters of the Research and Clinical Committee. As an honour the Corresponding Membership is held in high esteem throughout the world.

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* Janet's principal works are: *L'automatisme psychologique*, 1889; *L'état mental des hystériques*, 1893; *Névroses et idées fixes*, 1898; *Les obsessions et la psychasthénie*, 1903; *Les névroses*, 1908; *The Major Symptoms of Hysteria*, 1908; *Psychological Healing, Les médications psychologiques*, 1919; *La médecine psychologique, Principles of Psychotherapy*, 1923; *De l'angoisse à l'extase*, 1926.

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Dr. Hans Evensen.

The name of Dr. Hans Evensen, Medical Director, Gaustad State Hospital, Vinderen, Norway; Commissioner in Legal Medicine for Norway; President, Norwegian Psychiatric Society, is well known to members of the Association. His chief study has been dementia præcox, and he has written the finest work on the subject which exists in his language. He is also an authority on the psychopathology of degeneracy and of delinquency. He has written a special guide for legal psychiatrists, and a handbook for attendants on the insane. His position of Commissioner in Legal Medicine and President of the Norwegian Psychiatric Society, shows how greatly he is esteemed by psychiatrists in Norway. He is well worthy of the honour that we now propose to confer on him.

Prof. Edward A. Strecker.

In Edward A. Strecker, M.D., Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia, U.S.A., America has an earnest and enthusiastic devotee to modern psychiatry. He is joint author with Prof. Ebaugh of what I consider to be the best practical book on clinical psychiatry at present obtainable. He is famous as a teacher and holds many clinical posts, including that of Clinical Professor of Psychiatry, Yale University, and Medical Director, Pennsylvania Hospital Department for Mental and Nervous Diseases. He has written much on the psychological conception of mental diseases, and on the prognosis of schizophrenia and puerperal psychosis.

Prof. Charles McFie Campbell.

I also commend to you Prof. McFie Campbell, M.A., B.Sc., M.D., whose literary merits distinguish him among the best writers on such subjects as "Personal Factor in Mental Disease," "Education and Mental Hygiene," "Mental Hygiene and Industry," "The Neurotic Child," and "Psychiatry and the Medical Student." He is Professor of Psychiatry in the Harvard Medical School, and Medical Director of the famous Boston Psychopathic Hospital, Massachusetts. He was born in Edinburgh and, is a Watsonian, a graduate of Edinburgh University and an old resident in the Edinburgh Royal Infirmary. He is well known to many members present. He has strong ties with the mother country, and nobody is more deserving of the honour thus recommended.

Prof. Wilhelm Weygandt.

The next is Wilhelm Weygandt, Ph.D., M.D., Professor of Psychiatry and Director, Psychiatric Clinic, University of Hamburg, an illustrious anthropologist and psychiatrist. He has achieved European fame for his researches. He was the Founder of the Forensic-Psychological Society of Hamburg, and also of the Association of Neurology and Psychiatry, Hamburg. He is also an Honorary Member of the Psychological Section of the Royal Society of Medicine, and of medical and learned societies in Russia, Turkey and Italy. He is the author of *Outline and Atlas of Psychiatry*, *Forensic Medicine*, *Diagnosis of Mental Diseases*, and a fine work on *Sect-formation*.

Dr. Frankwood E. Williams.

The recent International Congress on Mental Hygiene may be regarded as a monument to the organizing capacity of Frankwood E. Williams, M.D., Medical Director of the National Committee for Mental Hygiene, U.S.A., a position he attained by his intensive and well-known studies on many aspects of mental hygiene and social psychology. He occupies several other medical administrative posts with great distinction. He is the Editor of *Mental Hygiene*, the leading journal in America on the subject, and the author of a fine work on *Adolescence*. He has written extensively on "Community Responsibility," "The College Student," "*Rôle* of the Public Health Nurse," "Anxiety and Fear," "Alcohol," all in relation to mental hygiene. He is an earnest advocate of the better education of medical men in psychiatry. America has no man of greater promise in the subject of mental hygiene than Dr. Williams.

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Prof. Koichi Miyake.

Psychiatry has advanced amazingly in Japan, and it is wise for our own sake that we should have closer contact with that country. With this object in view we have invited Prof. Koichi Miyake, M.D., Professor of Psychiatry, Tokio Imperial University; Director, Tokio Municipal Matsuzawa Psychopathic Hospital, Japan, to become a corresponding member. His fine scientific communications to the Japanese Society of Psychiatrists and the outstanding place he has attained in his profession render him well worthy of the honour.

Dr. Jan Piltz.

Some of us have already met Jan Piltz and have been struck by his vivid personality, his alert manner and his enthusiasm in the cause of mental hygiene. He is Professor of Neurology and Psychiatry in the University of Cracow, and Director of the University Clinic for those subjects. This clinic is one of the finest in Europe. One of his best works is that on *Manic-Depressive Insanity*. Latterly he has devoted himself to the biological approach in psychiatry, particularly to "character formation." He is presenting to the Association a paper on the subject, which will appear in the next issue of the Journal. He is a great Polish physician and that he is a born administrator is recognized in his position as Dean of the Faculty of Medicine at his University and President of the Neurological Society of Cracow.

Prof. Ladislav Haškovec.

This new-old country, Czecho-Slovakia, is happily now free to advance along its own lines of national aspiration, of which it has taken abundant advantage. In modern mental hygiene Ladislav Haškovec, Professor of Nervous Diseases in the Charles University, Prague, is one of its greatest leaders. He has done fine research on auto-intoxications and endocrine functioning, especially of the thyroid gland. He is keenly interested in the psychopathology of the emotions and in personality questions.

Dr. Henri Flournoy.

Lastly I come to one who is well known to many present. I mean Henri Flournoy, M.D., a Consultant in Psychiatry in Geneva. He is a son of the Flournoy whose experiment on the inner ear in birds is classical in physiology. He was with us at our last Annual Meeting and took a distinguished part in our discussions, much to our delight and edification. No more need be said, as I feel sure his election and his acceptance of this honour will gratify us all.

In conclusion I trust I have succeeded in persuading you to honour these gentlemen and that you will give directions accordingly. (Loud applause.)

The President then appointed Drs. Cedric Bower and Douglas McRae to be scrutineers of the ballot.

Honorary Members.

PIERRE JANET, M.D., Member of the Institute of France; Professor of Psychology, College of France; 54, Rue de Varenne, VII^{e}, Paris.

HARVEY CUSHING, *C.B.*, A.M., LL.D., Sc.D., Litt.D., M.D., M.Ch., F.R.C.S., Professor of Surgery, Harvard University.

Hofrat Prof. JULIUS R. WAGNER VON JAUREGG, M.D., Professor of Psychiatry, University of Vienna; 1 Landesgerichtstr. 18, Wien.

Proposed by Drs. Buchanan, J. Chambers, J. R. Lord, S. E. Martin, Nathan Raw and R. Worth.

Corresponding Members.

Dr. HANS EVENSEN, Medical Director, Gaustad State Hospital, Vinderen, Norway; Commissioner in Legal Medicine for Norway; President, Norwegian Psychiatric Society.

EDWARD A. STRECKER, M.D., Professor of Nervous and Mental Diseases, Jefferson Medical College; 111, North Forty-Ninth Street, Philadelphia.

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CHARLES MCFIE CAMPBELL, M.D., Professor of Psychiatry, Harvard Medical School; Director, Boston Psychopathic Hospital; 74, Fenwood Road, Boston, Massachusetts, U.S.A.

Dr. phil. et med. WILHELM WEYGANDT, Ordinary Professor of Psychiatry and Director, Psychiatric Clinic, University of Hamburg; Friedrichsbergerstr. 60.

FRANKWOOD E. WILLIAMS, D.Sc., M.D., Medical Director, The National Committee for Mental Hygiene; Editor, *Mental Hygiene* and *Mental Hygiene Bulletin*; 370, Seventh Avenue, New York City, N.Y., U.S.A.

Dr. KOICHI MIYAKE, Professor of Psychiatry, Tokio Imperial University; Director, Tokio Municipal Matsuzawa Psychopathic Hospital, Japan.

Dr. JAN PILTZ, Professor of Neurology and Psychiatry and Director, Neurological and Psychiatric Clinic, University of Cracow; Dean of the Faculty of Medicine of the University of Cracow; President, Neurological Society of Cracow, Poland.

Prof. Dr. LADISLAV HAŠKOVEC, Professor of Nervous Diseases in the Charles University, Prague, Czecho-Slovakia.

Dr. HENRI FLOURNOY, Consultant in Nervous Affections, 6, Rue de Mounetier, Geneva, Switzerland.

Proposed by Drs. J. R. Lord, S. E. Martin, Nathan Raw and R. Worth.

Ordinary Members.

CRICHTON-MILLER, HUGH, M.A., M.D.Edin., M.D.Pavia, Hon. Director, Tavistock Square Clinic, 51, Tavistock Square, London, W.C. 1.

Proposed by Drs. J. R. Lord, J. R. Rees and T. Saxty Good.

MILLER, FREDERICK RICHARD LANFEAR, M.R.C.S., L.R.C.P.Lond., D.T.M.&H. Medical Officer, East African Medical Service; c/o Honble. D.M.S.S., P.O. Box 641, Kenya Colony, East Africa.

Proposed by Drs. J. S. Harris, Thos. Tennent and Louis Minski.

The PRESIDENT announced that these gentlemen had all been unanimously elected to membership of the Association. The Association was greatly indebted to Dr. Lord for the immense amount of time and trouble he had expended in putting before the meeting a statement of the qualifications of the gentlemen. These distinctions were an honour very jealously guarded by the Association, and he knew that the greatest care was taken in their bestowal. In electing these distinguished men to-day, the Association had also honoured itself.

He would himself like to say a word in regard to Prof. Harvey Cushing. In addition to being a great scientist and investigator, and an enthusiast, the Professor was a keen sportsman. As Dr. Lord had told them, Cushing, at the beginning of the war, volunteered, with other distinguished surgeons, to bring a unit over to France for the care and treatment of the wounded. When he encountered the first case of gas gangrene in a soldier he was so puzzled that he sat up all night with the patient trying to get to the bottom of it, and then, at 6 o'clock in the morning, he jumped on to a horse and rode over to the speaker's camp and said, "For God's sake, have you got a guinea-pig?" There was a guinea-pig available, but it proved of little value in investigations. This action showed, however, what a fine sportsman Prof. Harvey Cushing was.

(8) COMPLEMENTARY MOTIONS AND ANNOUNCEMENTS.

The PRESIDENT then announced the following honours:

(*a*) Winner of the Gaskell Gold Medal and Prize for 1930: Dr. G. W. T. H. Fleming, Deputy Medical Superintendent, Dorset County Mental Hospital.

(*b*) Winner of the Bronze Medal and Prize of the Association: Dr. Duncan Macmillan, Assistant Physician, Crichton Royal Institution, Dumfries.

(*c*) Winner of a Divisional Prize: Dr. G. E. Shand, Deputy Medical Superintendent, Winson Green Mental Hospital, Birmingham.

(*d*) Honours 1930:

Baron of the United Kingdom.

The Rt. Hon. Hugh Pattison Macmillan, M.A., LL.D., K.C., under the title of Lord Macmillan of Aberfeldy, on becoming a Lord of Appeal in Ordinary and Member of the Judicial Committee of the Privy Council.

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AFTERNOON SESSION.—TUESDAY, JULY 1.

At the Sir Wm. Dunn School of Pathology.

Dr. Nathan Raw in the Chair.

(9) A VOTE OF THANKS TO THE OFFICERS AND COUNCIL OF THE ASSOCIATION.

Dr. J. GREIG SOUTAR (Cheltenham) said that the pleasant duty which had been assigned to him was easily carried out, as it was obvious that members felt very much indebted to the Officers and Council of the Association for all the excellent work they had done during the year. In many ways it had been a strenuous year, but it had been a very pleasant one; there had been the usual co-operation

THE SIR WM. DUNN SCHOOL OF PATHOLOGY, OXFORD.

between the Officers and the Council and the general body of members, which made the work of this Association a pleasant task for all concerned. Every officer did his level best to promote its interests, and he proposed that to the Officers and Council be tendered very hearty thanks.

The motion was agreed to by acclamation.

The PRESIDENT said that on behalf of his brother officers and the members of the Council he had to thank the meeting very much for the way in which it had passed this resolution of thanks. He very much appreciated the kindly remarks of Dr. Soutar. It had been a real pleasure to him to occupy this very honourable position; the whole of his year of office had been one continuous harmony. Everyone had bestowed of their best in the cause of psychological medicine and for the good of the Association.

(10) INDUCTION OF THOMAS SAXTY GOOD, *O.B.E.*, M.A., M.R.C.S., L.R.C.P., TO THE OFFICE OF PRESIDENT.

His next and final duty was sad in one way, for he would now have to pass over his Presidential Insignia, of which he had been so proud, to another, even though he was quite sure that gentleman would adorn it. In Oxford it was unnecessary to introduce Dr. Good; everybody there respected him, and his reputation in the Association was very high. He was certain that the new President would have a very pleasant year of office.

Dr. Nathan Raw then invested Dr. T. Saxty Good with the Presidential Badge.

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The President in the Chair.

(11) INVESTITURE OF THE EX-PRESIDENT WITH THE PAST-PRESIDENTIAL BADGE.

The PRESIDENT said his first duty from the chair was to invest the immediate Past President with the Past-Presidential Badge. He would express the fear that he might not be able to fill the post as well as Dr. Nathan Raw had done. He would do his best to maintain the high traditions of the office and was gratified at the honour the Association had paid him.

(12) PRESENTATION TO THE PRESIDENT OF FOREIGN DELEGATES AND OTHER DISTINGUISHED VISITORS.

Dr. LORD said it had for a number of years been his pleasant duty at the bidding of the President to introduce to him distinguished visitors.

Dr. Lord than presented Prof. August Wimmer, of the University of Copenhagen, delegate from Denmark.

Prof. WIMMER said it had been a very real pleasure to him to attend the Annual Meeting of the Association once more. Each time he came he had carried back with him precious recollections of the really scientific way in which psychiatry was studied and carried out in Britain.

Dr. LORD next presented Prof. Jan Piltz, of the University of Cracow, delegate from Poland.

Prof. JAN PILTZ: L'invitation de la Société Royale médico-psychologique à l'assemblée annuelle a été pour moi une très agréable surprise. Votre intention de m'accorder le titre de membre correspondant de la Société Royale m'a causé une vive et profonde satisfaction. J'apprécie cette haute distinction venant de la part de la Société Royale, qui compte parmi ses membres les plus éminents savants du monde, comme un grand honneur pour moi. En recevant le diplôme de membre correspondant de la Société Royale médico-psychologique, je me permets d'exprimer au nom de l'université de Cracovie dont je suis le représentant mes plus sincères remerciements, et de vous assurer que je tâcherai de contribuer à resserrer plus intimement les liens qui unissent les institutions scientifiques médicales de l'Angleterre et de la Pologne.

Dr. LORD presented Prof. Dr. W. Spielmeyer, of the Kaiser Wilhelm Institute, Munich, representative of the *Vorstand der Deutsche Verein für Psychiatrie.*

Prof. W. SPIELMEYER remarked that he feared he was very inefficient in his use of the English language to express his feelings; but he wished to say how glad he was to attend the meeting, and to convey his gratitude for his kindly reception, and for the invitation extended to his Society. His colleagues in Germany shared the British wish for a very intimate and cordial comradeship in this work, and he hoped this would be the commencement of a long association.

Dr. LORD said that a letter had been received intimating that, owing to the Vienna summer session not being concluded, no one could be spared from the faculty to represent the Vienna Neurological and Psychiatric Association, so Prof. v. Economo had appointed for the task Dr. K. O. Newman, at present on the staff of Littlemore.

Dr. NEWMAN expressed his appreciation of the invitation to take part in the proceedings, and had been asked to say how much his colleagues in Vienna valued the opportunity of doing honour to the Association. He wished the Association a prosperous future.

Dr. LORD next introduced Laurence Brock, Esq., *C.B.*, the Chairman of the Board of Control (England and Wales).

Mr. BROCK said the meeting would not expect any words from him, except to say how very glad he was to be present to listen to the inaugural address of his friend Dr. Good.

Dr. LORD said that other distinguished guests from foreign countries had written expressing their regret at not being able to be present.

Prof. Wagner von Jauregg could not be present owing to an acute illness, but had written expressing his highest regard for the Association.

Prof. Haškovec had written saying how much he appreciated the honour to be bestowed on him: "The appreciation is all the deeper because the honour comes

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from an Association and a nation whose illustrious members have always been in the fore-front of biology, neurology and psychology and whose greatness and scientific and cultural services I have admired since childhood. My father taught his children to know the names and work of Darwin, Franklin and Smiles." Dr. Haškovec went on to say that an illness prevented him from being present, and that he had intended to read a paper on "Subcortical Psychism and Localization of Central Consciousness."

Dr. J. H. Pameyer, of Rotterdam, had written saying he could not be present: "Be sure of my best wishes for the success of the meeting presided over by the Medical Superintendent of Littlemore Hospital, who last year gave the Dutch visitors such a cordial and instructive reception."

Through the French Ambassador, Dr. Henri Colin had expressed the regret of the Société Medico-Psychologique that owing to the period of the year and the multiplicity of scientific reunions which had recently occurred, they were unable to send a delegate.

Dr. Johannes Bresler, of Kreuzburg, who was to have represented the Deutsche Verein für Psychiatrie, had found himself, much to his regret, unable to attend.

Letters of regret had also been received from Dr. Henri Flournoy, Prof. Janet, Prof. W. Weygandt, Dr. O. L. Forel, Dr. B. Rodriguez Arias and others.

(13) PRESENTATION OF MEDALS AND PRIZES FOR 1930. (*vide* 8).

Dr. LORD, in introducing the winners of medals and prizes, explained that Dr. G. W. T. H. Fleming, the winner of the Gaskell Gold Medal and Prize, was unable to be present, and so also was Dr. Duncan Macmillan, the winner of the Bronze Medal and Prize. He presented Dr. G. E. Shand, the winner of a Divisional Prize, to the President.

The PRESIDENT offered these gentlemen his congratulations, remarking that the Examiners particularly wished it to be known that Dr. Fleming not only won the Gaskell Prize, but gained it with distinction.

(14) THE PRESIDENTIAL ADDRESS.

The PRESIDENT then delivered his address on "The History and Progress of Littlemore Hospital" (*vide* p. 602 *ante*).

(15) VOTE OF THANKS TO THE PRESIDENT FOR HIS ADDRESS.

Dr. R. R. LEEPER (Dublin), in proposing this vote, said that the address was very practical and contained something from which all could learn. For his own part he had never listened to anything more suggestive. The President had blazed a white trail which it was to be hoped members of the Association would follow. He had described the dramatic way in which Providence guided him into the ranks of the specialty. All knew of Newton's great discovery when he saw the apple fall from the tree, but he never realized before what a great debt the Association owed to the cause which brought Dr. Saxty Good into the specialty, and it was extraordinary that this Association should have cause to revere the name of Higginson, so indirectly responsible for the distinguished occupant of the Presidential Chair. Omar Khayyám said:

> "Myself, when young, did eagerly frequent
> Doctor and Saint and heard great Argument,
> About it and about: but evermore
> Came out by the same Door as in I went."

None of those who had listened to the address of the President would go out of the door of this room in the same condition of unenlightenment as when they went in.

To speak on the points raised in it would require hours, and he did not feel capable of doing it; more would have the opportunity of reading it in the Journal and considering it. He hoped many would have the opportunity of seeing Dr. Good's work before leaving Oxford. The speaker had been much interested in the

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great use Dr. Good had made of his war experiences, and how he had added to the knowledge of the specialty by the way he handled those who came to him in that strenuous time. He (Dr. Leeper) did not claim to be a speaker, though he was not quite like the Member of the House of Commons of whom it was said he did not know what he was going to say when he got up, nobody knew what he was saying while he was speaking, nor what he had said when he sat down. He only wished to tender to the new President the Association's thanks for the exceedingly able and interesting address by him who might not inaptly be described as Oxford's *magnum bonum*.

Dr. EASTERBROOK (Dumfries) said he had, as representing Scotland, the very greatest pleasure in seconding the vote of thanks to the President for his admirable address. After the eloquent words of their friend from across the water, it would be unnecessary for the speaker to add much. In his address Dr. Good had almost covered the whole field of psychiatry, and he had gone into so many things that it was impossible to refer to any particular point here. Dr. Leeper said there would be abundant opportunity of reading and profiting from the address when it appeared in the Journal. It was good to find the President looking at psychiatry broadly—looking at the whole organism; he looked upon mental disease as a biological or bio-psychic condition. Every living thing had mind, including plants. Many years ago Sir George Stokes, who was the Isaac Newton of the Victorian era, pointed out that while the ether was postulated by physicists as explaining the phenomena of light and other things on the wave theory, its existence had never been demonstrated. Stokes also pointed out that it was no argument against the existence of mind to say that we were not conscious of it personally. There could be no doubt about the fact of the unconscious mind—he was not using the term in the sense of psycho-analysis. When a physical injury occurred, there were extraordinary vasomotor and vascular changes, and there were results which were excellently explained on physical and chemical grounds; but, at the back of it all, one asked oneself, "Why do these wonderful things happen?" There was a purpose which meant mind, and every tissue in the body had mind at the back of it, a mind which directed these physical processes explicable on a physical basis. The human being was mind, from the top of the head to the sole of the foot, although it was largely unconscious mind. That being so, it emphasized the importance of studying all one's cases from the psychological point of view, as Dr. Saxty Good had done.

Oxford had always been a pioneer in great thoughts, and it was appropriate, therefore, that Dr. Good's address should have emphasized the importance of the psychological approach in studies of psychiatry, especially from the biological point of view.

He had the greatest possible pleasure in thanking Dr. Good for his address, and he was sure the vote would be cordially agreed to.

The vote was carried by acclamation.

The PRESIDENT expressed his sincere thanks.

(*Adjournment.*)

Garden Party.

Members and their guests were kindly entertained by the Chairman and Committee of Visitors of Littlemore Hospital to a Garden Party from 4 to 6 p.m. at the Hospital.

About 250 accepted the invitation, and on arrival were received by Mr. J. H. Morrell (Chairman of Littlemore Hospital) and Mrs. Morrell, Mr. and Mrs. Dale, and the President and Mrs. Good.

Opportunity was afforded those who so desired of inspecting the Hospital, and tea was served in the hall. Music was provided by the 4th Battn. Oxfordshire and Bucks Light Infantry Band, conducted by Mr. W. S. Lickermann.

Civic Reception—9-11 p.m.

Members and their guests were received by the Right Worshipful the Mayor, Captain George Button, from 9 to 11 p.m., at the Town Hall, Oxford.

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VISIT TO THE MORRIS MOTOR WORKS.

In the afternoon members and their guests visited the Morris Motor Works by the courtesy of Sir William Morris, Bart.

There they saw in operation a fine example of British mass-production. They were keenly interested in the psychological reaction displayed by the workers, who, with no exception seemed a cheerful band, alert and interested in their work. It was ascertained that those doing what might be called monotonous tasks received extra remuneration, and that they remained at the job permanently. For the most part they were Oxford countrymen previously employed on the land.

GARDEN PARTY.

From 4–6 p.m. members and their guests attended a Garden Party given in the grounds of the Warneford Hospital by the Chairman and Committee of Management and Dr. and Mrs. Neill.

Over 200 were present and were greatly interested in the exhibition of beautiful work done by patients instructed by occupational therapists. A most enjoyable and restful afternoon was spent.

THE ANNUAL DINNER.

By kind permission of the Dean, Canons and students, the Annual Dinner took place in Christ Church Hall, Oxford. The President, Dr. T. Saxty Good, *O.B.E.*, presided.

The official guests included: The Rt. Hon. A. Greenwood (Minister of Health), Viscountess Harcourt, Capt. G. T. Button and Mrs. Button (Mayor and Mayoress of Oxford), the Rt. Rev. E. D. Shaw (Assistant Bishop and Archdeacon of Oxford, and Canon of Christ Church), Sir Arthur Robinson, *G.C.B.* (Permanent Secretary, Ministry of Health), Dr. Nathan Raw (Lord Chancellor's Visitor), L. S. Brock, *C.B.* (Chairman, Board of Control), Sir William Morris, Bart., Miss Ashurst, Mrs. Good, Sir E. Farquhar Buzzard, Bart., *K.C.V.O.* (Regius Professor of Medicine, Oxford University), and Lady Buzzard, Sir Humphry Rolleston, Bart., *G.C.V.O.*, *K.C.B.* (Regius Professor of Medicine, Cambridge University), Prof. Dreyer (Oxford), Prof. August Wimmer (Copenhagen), and Mrs. Wimmer, Prof. Jan Piltz (Cracow), Prof. W. Spielmeyer (Munich), Sir Squire Sprigge (Editor, *Lancet*), Lord Saye and Sele (President, Warneford Hospital), Dr. F. A. Dixey (Chairman, Warneford Hospital), J. H. Morrell (Chairman, Littlemore Hospital, Oxford), Capt. M. V. Weyland (Chairman, Mental Deficiency Committee, Oxford), Miss Evelyn Fox (Mental Welfare Association), Miss Vickers (After-Care Association), and others.

Dr. J. R. Lord (Co-Editor, *Journal of Mental Science*) and Dr. A. W. Neill (Physician-Superintendent, Warneford Hospital) were croupiers.

TOASTS.

The CHAIRMAN proposed the toast of "The King," and it was loyally pledged.

"THE CITY OF OXFORD."

Dr. NATHAN RAW, *C.M.G.*, in proposing this toast, said it was one which, he was sure, would be received with great enthusiasm. It was that of "The City of Oxford," and with it he was coupling the names of the Mayor and the Mayoress. When the President asked him to propose this toast he wondered what he could possibly find to say that was new with regard to this wonderful city of Oxford, and he came to the conclusion that he could say nothing new about it. Oxford was one of the names which extended round the whole civilized world, and scores of thousands of the most brilliantly intellectual men and women had lived in this great City and had conveyed their knowledge and their culture to every part of the world. (Hear, hear.) It was not his purpose, however, that evening to speak of the University; that, of course, was a different part of the great

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city of Oxford; he was to speak of the Municipality. It had been a very happy thought on the part of the Mayor and Mayoress to ask the Association to partake of their hospitality at the Town Hall on the previous night. (Applause.) That little function was one of the most restful that he had ever attended; it was a quiet talk with friends, while listening to charming music and being received most graciously by the Mayor and Mayoress. He wished, on behalf of the Association, to offer them grateful thanks for their thoughtful kindness.

A great Oriental in London the other day said that two thousand years ago, in his country, after-dinner speeches had been prohibited by Imperial Decree, the penalty for disobedience being decapitation! The speaker was very glad that that rule had not been enforced that evening. Still, the remarks he had to make must be brief, as there was a long list of speakers.

There was one great thing in connection with the Royal Medico-Psychological Association which had occurred this year, and which was really an eventful affair in its life, namely, the passing into law of the Mental Treatment Bill. That Bill, which would soon be an Act, would confer an immense boon and benefit on large numbers of those people who were in the early stages of mental disorder; and he wished here to say how pleased he was that this great Bill had been passed through Parliament during his term of presidency of the Association. He took the opportunity of saying how delighted the Association was to have present the Minister of Health—(Applause)—without whose powerful aid and driving force this Bill would never have passed through the Legislature. The Association thanked him most gratefully for all the efforts he had put forward on its behalf.

One other point he wished to mention with regard to the Municipality of Oxford; that was, that in addition to the great reputation the University gave to their city, there was now in Oxford the most wonderful industrial development in the country, namely, the Morris Motor Works. (Applause.) He was very glad indeed that Sir William Morris, whom members welcomed at the Dinner, had invited them to look over his works; and it was gratifying that he gave the name of the city to one of his best cars, and so enhanced the reputation of Oxford too.

The toast was cordially honoured.

The Mayor of Oxford (Capt. Button) thanked the company very much indeed for the kind way in which they had received this toast, and expressed his appreciation of the very kind terms in which Dr. Nathan Raw had proposed it. He felt he could safely assume—he knew it was true in regard to himself—that the honour which had been paid in this toast was one which was not offered to the members of the City Council personally, but to the City of Oxford, and he was proud for that reason. He wished to take this opportunity, the first he had had, of bidding the Association welcome to their beautiful city. He did that with the utmost sincerity. When he heard that the Royal Medico-Psychological Association was coming he admitted that, though he had heard of the Association before, in the multitude of everyday duties he had not paid the attention to its existence that it deserved. Therefore he had been at considerable pains to find out what it really represented. The first authority to whom he turned said, "That is all right, Mr. Mayor, they are the chaps who look after the lunatics." (Laughter.) The second authority averred that the Association had something to do with ghosts. (Laughter.) Since that time he had been at some pains to inform himself a little more exactly, though not perhaps with that accuracy which men of science would desire, and he found that the Association's efforts were directed towards the alleviation of a form of human suffering which was, perhaps, the most disastrous of all. It was for that reason he knew that there was no one in Oxford who would not welcome the members of the Association as sincerely and heartily as he was doing so that evening. He bade them a very hearty welcome to the City of Oxford. (Applause.)

Some of those present might never have been in Oxford on any previous occasion. He always had a very warm feeling for "the stranger within our gates," yet he envied him intensely, as it was a most enviable thing for anyone to find himself in a beautiful city like this for the first time. He would say to such, "I wonder what sort of a city you expected to find."

He was very glad to be able to speak on this occasion in the presence of Sir William Morris, because what he had to say had special reference to that gentleman. Did his hearers expect to find a city which had been spoiled by industrialism?

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Ten years ago it was prophesied that this would be the case; that Oxford would become an English Detroit, broadcasting motors all over the streets. Oxford achieved the distinction of a cartoon in *Punch* on the subject the future of the city, and now he was glad again to say in Sir William Morris's presence that time had shown how ill-founded and idle were those fears of ten years ago. Oxford was proud of Sir William Morris, and Oxford had not been spoiled. He hoped the President had been at pains to show the guests who had come to the city for the first time something of what it contained. He would direct their attention to those views of Oxford of which he himself never wearied, and which would show them how beautiful a place it was—views from Hinksey and from Boar's Hill. They were very beautiful in the light of dawn. (Laughter.) He did not know whether the Association would leave in an excursion party there to-morrow morning; if so they would not get him to join them! (Laughter.)

Many of his audience lived in Oxford, others had returned there. Some had probably not returned since their undergraduate days; they were treading the city's streets again, trying to recapture their lost illusions. He himself had been trying to do that for the last twenty-five years, but he had not succeeded. He hoped this gathering would agree that the work which had been done by the City Council had not been done in vain. He hoped those present had come to an improved Oxford, to an Oxford which was yet more beautiful. Certainly they had come to an Oxford which was now larger than it used to be, because recently it became the duty of the City to extend its boundaries. That step was not taken in any light spirit, nor in any spirit of adventure; it was taken only after very serious consideration and much controversy at the meetings of the City Council. It was his firm conviction and hope that the future would show how entirely justified that step was.

It was not for him on the present occasion to enter, in detail, into the many problems confronting the city at the present moment. There were many things which he would like to say, but the boundary extension was the most epoch-making event which had taken place in the history of the city in recent times. Accusations had been laid against the City Council that it did nothing to beautify Oxford. He left the verdict as to that to those who came after them; he felt that they would agree that such an accusation was not justified. (Applause.)

He wished to thank the company very much indeed for the very cordial way in which they had honoured the toast of the City of Oxford. He also wished to thank Dr. Nathan Raw for the very kind terms in which he had proposed it, as well as for the kind invitation the Association had extended to the Mayoress and himself to dine with them. (Applause.)

"The University of Oxford and Faculty of Medicine."

The Rt. Hon. A. Greenwood, *P.C.*, *M.P.* (Minister of Health), in proposing this toast, said: I feel a new embarrassment to-night. It has been my misfortune for many months now to respond to toasts, and not to propose them. I have had to reply on many occasions for either His Majesty's Government or the Ministry of Health, and from experience I can say that the latter toast is the one which it is easier to reply to. It is very difficult to reply for a very large number of people: it is very easy to reply for what I believe to be the most fundamental of all Departments of State.

I am called upon to-night, in all my innocence, to propose the toast of "The University and the Faculty of Medicine." I could spend a long time on the first part of the toast. I have heard hard things said against Oxford, especially by those who come from Cambridge. (Laughter.) I have heard hard things said about two ancient universities by people who come from certain other universities that exist in Great Britain, but it is true that Oxford has succeeded in the extraordinarily difficult task of keeping alive ancient learning without hiding its eyes from the new learning that is dawning.

I have heard it said by unkind persons that Oxford is the home of lost causes. Having been myself one of those who belong to causes that had never been found and therefore could not have been lost, I have a certain sympathy with Oxford. But at least this ancient University has treasured these causes with a delicacy and

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with a sensitiveness of feeling that I think we have all got to respect—we did so in the past, but with a little natural reluctance; and now we realize that she is prepared to look forward to the possibilities of the new knowledge of the future. And Oxford has a distinguished place in that realm of knowledge which is devoted to the health of our people. There are in Oxford now a number of distinguished members of the medical profession who have added to the knowledge of their time, who have given a new standing to the profession, and who at the same time have not forgotten that medicine, however wide its ramifications may be, is a relatively minor branch of human knowledge. And I am especially glad to think that we are meeting here to-night in this city, at a time during the annual meeting of this Association when we have in our midst Sir Farquhar Buzzard, who is not only a Regius Professor—which I am told is a wonderful thing to be—(Laughter)—in this University—but is a distinguished scholar who has a very intimate association with the problems which have brought this Association of yours to the City of Oxford.

Oxford happens to be a city where a great deal has been done in the sphere of mental treatment. (Hear, hear.) It is very fortunate, I think—it may have been a carefully organized arrangement, and I do not want to call it a cold or a mechanical arrangement—that this Association should meet here when your President, Dr. Good, is one whose name will always be remembered in this city and this county for the work that he has done in those lines of activity in which this Association is specially interested. (Applause.) Oxford, fortunately as I think, has never believed in the principle of early specialization. Speaking as a politician, I can see no virtue whatever in specialization, for it has never come my way. Life would have been easier for me if it had done. But you have, in this city, an opportunity—for the University of Oxford has always kept to the broad basis of knowledge without a premature specialization—(Applause)—you have now an opportunity, because of the generosity of Sir William Morris, not of a mere narrow, miserable specialism, but of research and practical development on a broad aspect of human life, an opportunity which I hope Oxford will fully utilize. When I heard the word "Morris" uttered for the first time to-night, I immediately shivered down my spine, for this reason. It was my good luck—or my misfortune—not long ago, on leaving the House of Commons one night, to be sent into the world of the unknown for a short period of time, having been knocked down by a mechanically propelled vehicle. It is true that those souls who have no sense of responsibility said that one ought to have taken more water with it at that time of night, and most of my friends in the House of Commons suggested that I must have been run over by a London General Omnibus; but I grieve to say, and to say it in the presence of Sir William Morris, that I was knocked down and suffered substantial physical damage because of a Morris car. (Laughter.) And if one is to be knocked down by a car, I see no reason why one should not be knocked down by a British car. That is my contribution to the turn of British prosperity. Sir William, besides being a leader of British industry, has proved that there is a new alliance between those who are responsible for our productive industries and the advance of learning, and I would like, if I may in his presence, to pay my humble tribute to him for his extraordinary generosity, and, more than that, for his wide vision, and because he has realized the possibilities of what he is doing for the Radcliffe Infirmary. (Applause.) And I should hope that in that development something may be done to deal with those problems which are the special province of the Royal Medico-Psychological Association. I know nothing about this, but I am expressing a hope which I trust may be realized, for we have now, in this country, a new opportunity of dealing with this problem in mental disease.

My friend, Dr. Nathan Raw, has said certain kind things about me to-night. I happen to be a mere instrument in this development that is taking place in our public health services. I should have liked here to-night, to have been able to say that the Mental Treatment Bill was on the Statute Book. It is virtually on the Statute Book, but virtue does not count. (Laughter.) When I say "virtually" I mean "nearly," and "nearly" does not count either, except in so far that it is now merely a matter of days before "The Mental Treatment Act, 1930" will be the law of the land. (Hear, hear.) Parliament is an extraordinary institution. (Laughter.) I have come to that conclusion after a relatively short experience of it. When you introduce what is called "an agreed Bill," you find you have to

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spend wearisome days in Committee, listening to people who say how wonderful it is, and yet who would like to smother it in blankets, and to other people, who do not like it, for no reason that they can adequately define. But, after a rather wearisome period in Committee, the Mental Treatment Bill has passed through both Houses of Parliament. I take no special credit for it to myself. It is quite true that when I was a junior minister in 1924 and had to announce the Terms of Reference and the *personnel* of the Royal Commission, I received more letters from lunatics than anybody has since, including one from a lady who said she saw the Devil on the previous Sunday coming out of a Wesleyan chapel, wearing a straw hat and carrying a pot of red paint! Since that date those of you who are interested in this Association have, by mobilizing and co-ordinating your knowledge, impressed your views on that Commission, and it has arrived at a Report which it has now been my privilege to carry partly into effect. I say "partly" because, as I have already indicated to you, Parliament is an extraordinary institution, and we have had to choose, this session, between "going the whole hog" and perhaps not getting out of it even the smallest pig that ever was, and on the other hand, biting off as much as we could chew, and digesting it. My own view was that we should bite off what we could chew, that we should proceed by guile—(Laughter)—that we should try to get the maximum of new powers with the minimum of opposition. That is why we were modest in our desires. We have now done something which, I believe, opens, if not a chapter, a minor chapter, or at least a footnote in the history of medical services of this country. (Applause.) I have thought for many years that one of the tragedies of our public health service was the view that physical disease was one thing, and mental disease was an entirely different thing. (Hear, hear.) I felt that there was something—if I may say so—essentially indecent in this view that mental disease had in it an element of horror, so that it ought to be hidden away from the eyes of the people. I see no more reason for being ashamed of having something wrong in the head than of having gout in the foot. Indeed, on the whole, behind something mentally wrong there may lie a more virtuous life than behind gout.

We have, in this Bill, got back to the view that mental disease is disease (Hear, hear); it is not an "act of God," not something of which people ought to be ashamed, but something which, taken in due course, may perhaps be dealt with and treated, and at the end of which the patient may again be a sane and normal citizen. And we have got back here, too, to this view: that there should be no distinction between the rich and the poor. I happen to have spent my life mainly in the category of the poor, and I suppose that, sooner or later, I shall go back to that category—(Laughter)—and I see no reason why, because I happen to be able, at this moment, to have Treasury notes in my pocket, I should be able to escape the dreadful stigma of certification, when my brother or my cousin, worse off than I am, is unable to escape. And we have, in this Bill, got rid, so far as we could, of what is undoubtedly a stigma, that stigma of certification required if the ordinary man and woman in the street is to receive mental treatment at all. You know the Bill better than I do; the only thing you do not know better than I do is, how to get a Bill through the House of Commons—(Laughter)—and that is nothing to do with mental treatment; all it proves is that there are people in the House who are either Clause 1 or Clause 5 cases. (Laughter.) But I don't want to elaborate that, nor do I wish to give you the names of the people in those two categories; if I did, you would find there is a residuum who ought to be certified. But it has been possible, with a very generous measure of good-will in the House of Commons amongst all political parties, to put this Bill on the Statute Book. I believe that it has tremendous opportunities and possibilities. It is not a Bill that I invented; it is a Bill which, whatever may be said about the Royal Commission, expresses partly—I do not say completely—the views which this Association has treasured for quite a long time. I am glad to think that I have been a very minor instrument in helping to put a measure on the Statute Book which will make it possible for us to assimilate into the general public health system of this country this disease which has for so long stood aside, and which has never had an opportunity of early treatment such as it may get under this Bill. Far be it from me to preach to the University of Oxford, or to the Medical Faculty of the University; I should shrink from the thought of giving advice, either to the city or to the University or to the Faculty of Medicine. Only I would put this—and I feel I can put it with confidence, because

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Sir Farquhar Buzzard happens to be not merely a distinguished Professor of this University, but a scholar who has shown his practical interest in the problems of neurology and of mental disease—I feel that the Conference which is now meeting here has a certain right to appeal to the University, because of the Professor of Medicine's position here, to support the magnificent work which has been done in this city under the inspiration of Dr. Good, who has been carrying out in advance of the Mental Treatment Bill many of the things that many of us want. I am emboldened, on your behalf, to appeal to the University to continue this work as an essential part of the research and teaching which must be carried on in the interests of the public health services of this country.

I am delighted to be here to-night because the Mental Treatment Bill happens to be—I was going to use a phrase which we often use in the House of Commons, and which I hope no one here will object to—it happens to be my baby, and a thriving baby of the family—and here again one must be careful—which I hope my Department may present to the world and bring to a state of maturity and usefulness. I am glad to be here also because of the work which we all know Dr. Good has carried out with great distinction in the sphere of mental treatment. (Hear, hear.) I am glad to be here because Oxford happens to be one of the most beautiful cities in the country. I am glad to be here because its University is now endeavouring to link the past with the present and the future. (Applause.) There are chapters in our past of which we should be glad to be rid; there are chapters in our past of which our nation must be proud, and those who in this ancient University have, from generation to generation, carried along the torch of learning are entitled to our respect and our reverence. And I will say this: no university can live in the past, no university can live in the present; the only institutions which can live and develop are those which, standing on the basis of approved tradition, look forward to the future. I hope that this University and its Faculty of Medicine, whilst clinging reverently to all that is good in the past, will look hopefully forward to the future. And my own view is that the Faculty of Medicine, because it is a developing science, is one of those departments of university life which will look forward to both the immediate and the remote future. And because we have, in the Regius Professor of Medicine, one who is a distinguished scholar, one who has paid special attention to the problems which have brought this Association here, one who is a physician to the King, one who has the interests of our people at heart—it is because of that I ask you to couple with this great toast, which I am proud to move, of "The University and the Faculty of Medicine," the name of Sir Farquhar Buzzard, Regius Professor of Medicine. (Loud applause.)

Sir E. Farquhar Buzzard, Bart., *K.C.V.O.*, in responding, said: It is significant that His Majesty's Minister of Health, fresh from superintending the birth of a post-graduate medical school in London, has come to bless our conception of a somewhat similar interesting event in Oxford. It may perhaps be inferred that a distinguished member of the Labour Government regards birth control as one of his most important functions. (Laughter.) But, Sir, speaking on behalf of the University and of the Medical Faculty, we welcome your presence here to-night most cordially, not only as a Minister ready to bestow his blessing upon the Promised Land and what it may bring forth, but as a prospective health visitor, from whom, I hope, we may expect frequent periodic visits, and to whom we may look, perhaps, for sympathetic and medico-psychological after-care. I must confess that our ante-natal period was unduly prolonged, and that it has not been without its anxieties. Indeed, its last days were somewhat disturbed by hints at baby-snatching. But a fairy godfather, in the form of Sir William Morris, appeared on the scene. His name is always associated with prompt delivery—(Laughter)—and our troubles were soon over. I would take the opportunity of expressing, on behalf of the University, our deep gratitude for Sir William's splendid generosity, including that component of gratitude which has been best described as "a lively anticipation of favours to come." (Laughter.)

Ours is an ancient University and an ancient medical school. We are proud of its history, and we take special pride in that period which belongs to the seventeenth century. I would recall to your minds that at that time Oxford could boast of such names as Sydenham, John Locke, Sir Christopher Wren—heard of in other activities—John Radcliffe, and many others. But I want to recall particularly to your memories to-night not only the fact that we are privileged, through the

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kindness of the Dean, to dine in Christ Church Hall—(Applause)—but that Thomas Willis was an undergraduate of this College, and that Thomas Willis, perhaps, has the same relationship to the physiology of the brain that Harvey has to the physiology of the circulation. The publication of his work on the Pathology of the Brain (*Cerebri Pathologia*, 1667) may perhaps be regarded as the foundation of medical psychology, of which this Association is one of the most impressive superstructures. But I could, perhaps, best illustrate the influence on contemporary thought exerted by Willis by quoting from the Diary of the Rev. John Ward, who was also a physician, a few notes on what was then a rather rare event, an autopsy. The words in the Diary are: "My Lady Windsor is dead; her brain was good, as Dr. Willis said, but her liver was rotten"—(Laughter)—adding, "Dr. Willis sets much store on the brain nowadays." That, I think, throws illumination on the popular mental attitude which obtained at that time towards the organ of mind. Speaking once more on behalf of the University Medical School and the University, I should like to say that we are proud that the Association chose Oxford for its annual deliberations this year; we are proud, also, that it chose for its President a man whom we can claim as a graduate, although we prefer to leave him, for certain reasons, not quite within the city, but at a nice safe distance. If he serves the Association as he has served our Medical School, you will be content, and more than content. In fact, I venture to prophesy that by the end of this week you will be paraphrasing the First Chapter of Genesis, and saying, "God has created a man to rule over our works by day and by night, and behold it is Good." (Applause and laughter.)

"The Guests."

Dr. J. Greig Soutar said the toast which he now had the honour of proposing was one which had always been very heartily received at meetings of the Association, and he was certain that the warmth which had been shown in the past would not be wanting on the present occasion.

The toast of "The Guests" was one which commended itself without any advocacy from him. One method which was followed in submitting such a toast was the biographical method; every guest's name was mentioned, and his history was traced from the very earliest time—every pre-natal and post-natal influence which had led to the generation of the distinction which had now become evident. He did not propose to follow that course, and for certain solid reasons, one of which was the length of the list of guests, to every one of whom the Association extended a hearty welcome and good wishes. To speak in detail of each guest would mean our being seen in evening dress in the streets of Oxford in the morning, and that would bring about a scandal to which the Mayor would surely object, and might lead to another interval of eighty-two years before the Association again visited this city—a catastrophe which could not be contemplated with equanimity, and to which he did not propose to be a party. Moreover, he was sufficient of a psychologist to know that one of the great elements in the mental make-up of the guests was modesty, and they would shrink from having their victories and virtues recounted in public.

What impressed him in a general way was that guests were present that evening from almost every activity of life. That was one of the greatest compliments which could be paid to the Association, as it indicated that the study to which it was specially devoted was one which was finding a very sympathetic ear in the community generally. In the earlier days of the Association the guests consisted principally of medical men who were engaged pretty much in the same line of work as were members of the Association. At one time the Association members had to deal with people who had already broken down in mental health; what could be done on the preventive side had not then been so fully recognized as it was now. The wider outlook on the subject had been a matter of development in recent years. Now it was more fully recognized how intimately psychology touched all phases of life.

He had to link with this toast the name of Sir William Morris—(Applause)—of whom a good deal had been heard that night, but not by any means too much. He felt that one little point had been omitted in this connection, namely, that Sir William and those engaged similarly had added enormously to the comfort of medical men. He remembered very well the days when the doctor, especially the

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country doctor, was never off the road ; now, however, he could get through his work and could do more of it, and still have some leisure. That was an advantage which had not been sufficiently insisted upon. Sir William Morris's munificence in contributing to the fuller efficiency of hospitals in existence, by giving better opportunities for making use of the knowledge that the profession had, and providing facilities for research, had shown great vision—a vision characteristic of a man who understood and applied the principles of psychology. (Applause.)

Another name which he had to connect with the toast was that of Prof. Wimmer, and he would like to include with him the other European visitors and those from our own Dominions. It was gratefully recognized that they were all contributing golden additions to the common fund of knowledge for the benefit of all.

Another name which he had to associate with the toast was that of Mr. Brock, the Chairman of the Board of Control. It gave him great pleasure to do this. Many of those present could have nothing but the most pleasant recollections of a body which had always been helpful to those practising among the insane and the mentally affected generally. Every attempt which had been made, especially in recent years, to advance the subject had been strongly supported by the Board of Control. And though the Minister of Health had graced this function and had been the instrument for carrying the Mental Treatment Bill through the House, much of the inspiration for it had come from the Board of Control, on behalf of which Mr. Brock, the Chairman, had toured the country, visiting the mental hospitals and thus gaining first-hand experience of the practice and knowledge of the aspirations of members of our Association.

Sir WILLIAM MORRIS, Bart., in responding to the toast, said : Mr. President, my Lord, Ladies and Gentlemen,—On rising to respond to this toast I find it very difficult, as an engineer, to find words fit for conveying my thoughts to a gathering of members of the medical profession ; but I would like to carry you back with me, in thought, to my early days, when I met, in connection with business, Sir William Osler. I think it can be said that he was a remarkable man, a man to be followed by members of the medical profession. I can say that I loved him very much, because he was one who understood his fellow men. But we have much to thank God for in the fact that we have to follow Sir William Osler such a man as Sir Farquhar Buzzard. He is a man who could not be surpassed, in the present generation, for his knowledge, more particularly of the nervous system, which is troubling us so much to-day ; in fact it seems that the more civilized we become the more nervous we are. I regret I am unable to speak in the vernacular of the medical profession, but I have done my best, since childhood, to understand something of medicine, for early in my life I wanted to be either a surgeon or a mechanic, but there were no " beans " at that time for me to be a surgeon—in other words, my parents had not sufficient money to produce that effect. But I would like to say that I have followed human anatomy through my various phases to my present position. I think it is wonderful to observe, especially since the war, how things have advanced in rapid stages, especially from the surgical point of view. But I see no reason why, if we work hard enough, we should not tackle the mental side, particularly in its earlier stages of disease or disorder—(Hear, hear)—and I think Dr. Good will agree with me there—or I should rather say that I agree with him on the point—that if disorders of the mind were attacked in their earlier stages, there would be much less lunacy in the world. I daresay you have all heard of the good work Dr. Good has done, but I think few of those here this evening are able to appreciate the amount of work he has done in his life, and especially here in Oxford, in organizing. I have talked with him on many occasions concerning mental troubles, even including my own. I sleep very little, and he has given me advice on that. I think, as I say, that few of you can appreciate what an amount of work he has put in in his medical career, and the sincerity with which he has worked for those unfortunates who are not so well circumstanced as we are. In this world forbearance is everything, and equity is a most valuable thing. I am assuming that the mental faculties of all of us are as they should be —(Laughter)—but there are many people in the world whose mental faculties are far from what they should be, and from what we should like them to be, and I can safely say that Dr. Good has done as much as any man could possibly do in considering the difficulties of such people, and in trying to understand their troubles, and I hope there are many other men in the world making similar efforts. We have with us to-night many visitors, including Mr. Beevers, who took my

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appendix away from me, and so added considerably to my health, and, I hope, to my capacity for doing some good in the future. There is also present Dr. Hobson, who attended me on that occasion and has attended me since, and Dr. Sankey, who, I think, has studied the electrical side of medicine from start to finish. When I think of those three men, I think of them as being as good as any of the medical men in the country, from their own particular work standpoint. I hope they will succeed in the way that they deserve; I am sure I wish them every success in the world. I would also like to speak of my friend Goodenough, son of the famous man in the banking world, and a man who has done much for our institutions and for the medical profession. He has helped me in my position as President of the Radcliffe Infirmary far more than I am able to describe to you; I could not have carried out those duties in the way I have without his assistance and also the assistance of others. Mr. Goodenough has worked very hard for humanity in this district, and it is for that reason I would not like to forget to mention him here to-night. We have also with us Miss Ashurst, who also has worked very hard for the Radcliffe Institution in general. The amount of work that has been done is amazing, but it is not more than will be done in the future, because I am hoping that Oxford, with all its traditions, with its University and with its wonderful Radcliffe Infirmary, will produce something more in the near future, even more than it has produced in the past. And I would like to say I shall always be behind any efforts that they like to put forward. Although I know so little from the medical side, I can, from the practical side, look forward to that which I hope will be a benefit to mankind. (Applause.) I would like to give all credit to the matrons and assistants in the two institutions which we have near Oxford, because they are doing the most wonderful work, work which the Almighty in the next world will thank them for far more than they can be thanked on this side of the grave.

I think illness on the mental side is a dreadful illness, and I am of the opinion that if people would only gather the impression which I have gathered from the facts that Dr. Good has put before me and which I see quite clearly, namely, that if the mental side is taken into consideration and treated early enough, there would not be so much lunacy, they will see how great this work is. I hope that in the not far distant future we shall see the mental side taken up from that point of view, namely, in its earlier stages, and I shall be very pleased to do all I can to help.

In responding to this toast, I am sure the ladies will be with me when I say that they are delighted to be here to-night in such a cause, and I am equally sure that such a gathering would not have been complete without them. And I feel that they will help the other half on many occasions and will do their best in this arduous work. It is, I think, time that serious attention was given to this early side of mental disease.

I thank you very much for the patience with which you have listened to me; I fear I have spoken too long, longer than it was intended I should speak, but I do want you to know and believe that all I have said comes from the bottom of my heart, and that whatever I can do in the future I shall be delighted to do. (Loud applause.)

Prof. AUGUST WIMMER (Copenhagen) also replied to the toast, remarking that it was a great pleasure to him that he had been singled out for this distinction. Though he had heard jokes being passed around the tables, he himself had been much impressed by the noble hall in which they were dining, and the traditions which it and the whole University represented. The Medico-Psychological Association of France dined in one of the old, historic chateaux, and there also he had felt the influence of history, and expressed it in the speech he made. He wished the gathering to appreciate the grateful feelings which the foreign visitors entertained on this occasion, and for all the beautiful things which had been shown to them. Foreigners from many countries had a liking for England, as it was so much a country of traditions, of science and of realistic common sense; these attributes well counterbalanced the too-rigid scientific speculations of the Continent; similarly English psychiatry had always balanced the transcendentalism of some of the continental schools. This was another reason for real co-operation between the two. He had attended the recent Congress on Mental Hygiene in Washington; it was an International Congress, and this science of psychiatry should be international, for it had been well said that "science knows no boundaries." It had no

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relation to political controversies. It would be impossible to realize all their beautiful aims, as they were not confined to mental hospitals, for psychiatry must go outside, among the members of the community. There was much work for psychiatry in every-day life, and it was impossible to do that work without a close co-operation between Continental, American and English psychiatrists. He took it that the invitation to come here was an expression of an agreement with this desire, for the benefit of the mental health of the community, which was so much neglected during the four or five years of the Great War. He raised his glass to the prosperity of the Royal Medico-Psychological Association. (Applause.)

Mr. Brock, *C.B.* (Chairman of the Board of Control), also replied. He said that when his friend Dr. Lord intimated to him that he was to have the honour of sharing in the response to this toast, he added with almost menacing emphasis that but few words would be expected of him. He would do his best to comply with that hint, but he felt very proud to be associated with this toast, because it rarely fell to the lot of any layman to share in responses which were taken also by two Regius Professors of Medicine—probably a rare association. He was also glad to be present because the Board of which he was Chairman set a very high value on the work of the Medico-Psychological Association. Most particularly, however, was he glad to be present because of the high regard he had for the President, Dr. Good. He had learned a great deal from that gentlemen, who had done a great deal in establishing an out-patient clinic in association with Littlemore and Radcliffe, and in so doing had "blazed a trail" which he hoped many other medical superintendents would follow. He thought that Robert Browning must have been stirred by some strange prophetic imagining when he wrote, "The little more, and how much it is." (Laughter.) He, the speaker, did not care to speculate what the poet had in mind when he also wrote, "The little less, and what worlds away."

Not only did he participate in the expressions of thanks for this collective hospitality, but he had also to thank to-night those who on many occasions had shown him individual hospitality. It had been his privilege to visit many of the members in their own hospitals, and whenever he had done so he had been met with great cordiality. Many had admitted him into the intimacy of their own homes—a compliment which he would always appreciate. One hospital lingered gratefully in his memory because of the surpassing merit of its roast duck; it was a hospital with few other merits, but the ducks were of such entrancing succulence that they went far to console him for the absence of an admission unit a treatment centre, and other resources which a mental hospital should properly possess. To all, whether they took him into their homes, or treated him as a P.S.A. "for men only," he desired to offer his sincerest thanks for their hospitality. Sometimes medical officers sacrificed to him their well-earned Saturday afternoon's golf, and for all the consideration shown him he would remain their debtor. (Loud applause.)

"The Royal Medico-Psychological Association."

Sir Humphry Rolleston, Bart., *G.C.V.O.* (Regius Professor of Physic, University of Cambridge), said that in proposing the toast of the Association it was clear that he was preaching to the converted. He was to couple it with the name of his friend Dr. Saxty Good. It was the toast of the evening, and, like good wine, it had been kept to the end of the evening, and needed no bush. He would like to mention briefly two points, as they had a bearing on general medicine. First, there was the pioneer work which had been done in regard to attaining the ideal of medicine, namely, the prevention of disease. Secondly, there was the work which the Association had done in bringing together the special work of the Association with that concerned with the diseases of the body. It had been said—and with that he thought the Minister of Health would probably agree—that every nation had the Government which it deserved and it might similarly be said that an Association had the President it deserved. If the speaker had not already known something of what the Association had done, he would be entirely convinced of its virtues now that he knew his friend Dr. Good was in the chair. He had known that gentleman probably longer than anybody in this room—some forty years, and it was not a day too long. There could be no doubt that he was an ideal President. His personality, his keenness and his

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courtesy, and the affection he inspired in all who had to do with him, showed at once that he was in the right place. Having placed him in the chair, the Association had thereby honoured itself.

The CHAIRMAN, in acknowledging the toast, first read a telegram which had been received from the Dutch Association of Psychiatry and Neurology, sending "best wishes for the success of the Annual Meeting." Too many nice things had been said about him, the speaker, to-night. On his left was the rock on which he had leaned all his life—Sir Humphry Rolleston; he had never lost touch with him, and without his aid he could not have attained to his present position. Another rock to which he owed a very great deal was Sir Farquhar Buzzard. It had been his great felicity to have been trained under one Regius Professor, and to be ending his career under another. Why the Association had placed him in the chair he could not think, unless they wanted to come to Oxford. Members had already listened to him for fifty minutes, and as there was a lot to do on the morrow, he would say no more.

The event concluded with the singing of "For he's a jolly good fellow."

Between the toasts the audience was entertained by the Elizabethan Singers and by character songs from Dr. C. W. S. Davies-Jones, Deputy Medical Superintendent, Littlemore Hospital.

MORNING SESSION.—WEDNESDAY, JULY 2.

At the Sir William Dunn School of Pathology.

The President in the Chair.

16. PAPER.—"**Mental Changes in Cardiac Disease**," by GEORGE ALEXANDER GIBSON, M.A., B.Sc., M.D., F.R.C.P. (*vide* p. 632).

Dr. GIBSON (referring to the tables) said: As to hyperpiesis, 6·2% of cases show mental changes, in auricular fibrillation 18·3%, in angina pectoris 40% (these figures would probably be different in a larger number of cases), in dilatation 23·3%. Amongst rarer forms of cardiac disease all the heart-block cases showed some slight mental change, and one out of six of the aortic cases.

I have subdivided the mental changes in private patients into major and minor, and again, as in the hospital cases, I have made no distinction as to cause and effect. Any patient who showed mental changes I have put down in the list. Of the cases with major symptoms, four were patients requiring certification, in 2 there was aphasia, in 1 there were hallucinations, in 1 there was drug addiction (I am not sure whether that was cause or effect); in 4 there was confusion, and in 1 there was hysteria, and in this case there was another cause for the hysteria. Therefore there were 13 cases out of 127, or 10·2%, which showed mental symptoms in association with gross cardiac disease.

It is not always possible to exclude cerebral lesions; the reason for mental changes probably lies more in the manner in which patients with specific psychological tendencies react to circulatory and other changes.

The PRESIDENT said he was sure the Association and everybody present would wish to thank Dr. Gibson for the most exhaustive way in which he had dealt with this difficult problem. He feared that he, the speaker, was to be blamed for being extremely voracious, for he had provided a rather full programme, on both the physical and the mental side, but as the digestion of members was strong, they would be able to assimilate it. Should any members desiring to speak be excluded because of the exigencies of time, he hoped they would send their contribution in writing to the Journal.

Sir HUMPHRY ROLLESTON expressed his high appreciation of the sound basis of facts in Dr. Gibson's contribution. He divided the cases of mental disorder in cardiac disease into two categories: (1) In which the mental change was associated with but not secondary to disturbance, such as stasis or anæmia, of the circulation. Obviously syphilitic or arteriosclerotic lesions might occur in the central nervous system and the heart; acute toxæmia, for example that responsible for early

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cardiac failure in diphtheria, which appeared to cause hypoglycæmia, might concurrently disturb the cerebral functions. In cardio-renal disease nervous symptoms might be uræmic, or might possibly be due to a wave of acidosis, such as had been thought to cause cardiac asthma. The effect of drugs must not be forgotten; thus in acute rheumatism with cardiac involvement salicylates might, by disturbing the sense of taste, lead patients, especially women, to believe that their food was poisoned; a case was quoted, of a man, probably hypersensitive to salicylates, analogous to aspirin asthma, in whom acute mental disturbance occurred.

(2) Cases in which the cardiac and circulatory condition might be regarded as the cause of mental disorder. It was assumed that gross lesions, such as embolism and thrombosis, were not under consideration. Dr. Gibson had conclusively shown that congestive heart failure and the resulting cerebral stasis did not necessarily cause mental disturbance, and it seemed reasonable to assume the presence of neuropathic disposition in the patients manifesting mental disorder. Usually the manifestations were of a depressive nature, but in aortic regurgitation active maniacal symptoms, especially at night, might occur. It seemed natural to correlate mental disorder in coronary thrombosis with the well-marked fall of blood-pressure seen after the onset. With regard to the delirium of chronic cardiac disease, Clifford Allbutt, in 1885, described it as a "delirium of place" (the patient imagining that he was in some other place) and thought that the prognosis of such cases was absolutely fatal. This attracted little attention, though Clouston spoke of it as "cyanotic" delirium; in 1924 Massini redescribed it as "travelling" delirium, and G. M. Robertson then pointed out that the character of "travelling" was common to all forms of true delirium.

Prof. W. SPIELMEYER (Munich) said he would like to be allowed to add a few words on this interesting paper of Dr. Gibson's. He did so from the point of view of the newer histologists. In the last year his clinic had been chiefly engaged on the psychoses. In the course of preparing his paper he made some studies on the interstitial changes which took place in cases of heart failure. They were able to show, in a great number of cases, associated changes of this kind in patients who suffered from heart failure, but not in consequence of vascular disease. The chief kinds of changes were lesions of the cortex, old scars, too small to be visible macroscopically, special methods being required to become aware of them. And widespread changes in the brain could be demonstrated. There were other cases in which there was a discoloration of the cortical ramus. These and other lesions they explained on the basis that there was not sufficient nutrition conveyed to the nervous tissue. But there must be another factor in addition. Not all the brain was involved in these changes, only certain parts. He and his associates compared these cases with others in which there was no mental disease. In their studies of the brain members present would remember the findings reported as occurring in senile dementia; there was such a change that the patient was bound to show mental disorder. In senile dementia there were many fatty degenerative changes; it was a quantitative differentiation. And fissures and cracks could be found even in normal cases. There were gross lesions which could be explained, but there were also small changes, the explanation of which had not yet been given.

Dr. J. GREIG SOUTAR (Cheltenham) said he had but two remarks to offer. One was that only a small proportion of heart cases suffered from mental disorder, and the second remark was that he had noted from the excellent paper read that the form of cardiac change associated with mental disorder was that form in which the patient was most conscious of his disability, so that apprehension weighed very largely in the production of many of these mental disorders.

Dr. GIBSON, in reply, said he would like to say to Sir Humphry Rolleston, in regard to the rapid fall of blood-pressure in ischæmic necrosis, that he had only his impressions, but he thought the alterations in blood-pressure would not explain the mental changes, nor would the rapidity of the blood-pressure fall explain them in every case. He thought it would be necessary to collect a much larger number of cases before light would be shed on the cause.

He had been glad to hear Prof. Spielmeyer express his faith that there was something in the histology of the brain in these cases. He, the speaker, had been under the influence of the President for twenty-five years, and he still preserved some of that gentleman's faith and optimism in regard to the nerve-cell, and what could be seen under the microscope.

Dr. Soutar's remarks had been particularly grateful to him, as his own impression

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agreed with them. In the cases of the two apprehensive patients with extra-systoles, here was a symptom which had no connection with expectation of life, and was of no consequence, yet those patients were acutely apprehensive. One of the cases he, the speaker, saw, was an able lawyer, one belonging to a profession which, in ordinary circumstances, would not be expected to show mental symptoms in disease, and yet that man was almost beside himself because of the sensation he had that his heart was "constantly turning somersaults."

His object in the paper had been to bring before this meeting of psychiatrists the problem as he himself saw it from the beginning. Dr. Soutar's remarks explained at least half the symptoms which one found in cardiac disease

He thanked those present very much for the way they had received his paper.

17. PAPER AND LANTERN DEMONSTRATION.—**"The Influence of Circulatory Changes on the Central Nervous System,"** by Prof. W. SPIELMEYER, of the Kaiser Wilhelm Institute, Munich. (*vide* p. 641.)

Prof. SPIELMEYER (during his demonstration) said: We try to make use of the microscopical findings in the interpretation of clinical symptomatology. This can be done only in co-operation with the clinician. I do not think anatomists are able to explain some of the definitely psychic symptoms. I do not wish to be misunderstood as to my remark made in the discussion just before the paper. I think we can only understand the matter properly if we can bring into correlation the whole symptom-complex with the anatomical findings, and it is impossible, from the standpoint of psychology, to bring into relation psychic disorders with this cellular disorder. I was surprised to read in a German journal that the author thinks he can localize hallucinations in the general paralysis cases treated by malaria, because the clinical picture changes and hallucinations appear, and lesions were found in the temporal lobe.

The PRESIDENT remarked that he would like to say a good deal on the paper which had just been read, for it was within his (the speaker's) particular province. All he would say, however, was that he personally thanked Prof. Spielmeyer very much for the contribution. Ever since he, the President, was trained he had always been a morbid anatomist, and Prof. Spielmeyer had thrown more light on the subject than the speaker had seen for a long time. He invited a discussion on the paper.

Dr. D. K. HENDERSON (Glasgow) said it had been a great pleasure indeed to listen to the paper which Prof. Spielmeyer had given. Not long ago he had the pleasure of hearing Prof. Spielmeyer give an address at the New York Psychiatric Institute, and he was much impressed, on that occasion, by the grasp and the all-round point of view which was then expressed. He had been even more impressed by the way in which he had opened the present discussion. The histo-pathology and anatomy of the brain had needed what the Americans called "a come-back" for some considerable time, and that come-back the professor had now admirably staged. All workers in psychiatry had needed a stimulus along these lines; they had got into the habit of thinking too much in terms of psychology and psycho-pathology in the last fifteen or twenty years, and it was a pleasure to hear an address of this type once more, as it opened up a great problem.

An important thing which Prof. Spielmeyer had urged that morning was that there should be co-operation between the clinical side and the histo-pathological side. Such co-operation, he thought, had been wanting in recent years; people in different departments had not been working together as they should have done. This was emphasized in the latter part of the address, when Prof. Spielmeyer stressed the importance of considering these matters from the ætiological point of view. If there was one thing which was needed in psychiatry to bring greater security and a greater feeling of confidence to one's medical colleagues outside their special ranks, it was to make it possible to talk with more definiteness about ætiological problems. If psychiatry could be tackled from that point of view, if it could be worked at intensely by careful clinical studies, and these studies could be carefully correlated with the anatomical findings, irrespective of whether the clinical picture was regarded as an organic or a functional picture,

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more soundness and a much better basis would be brought to bear in this work than had been the case for many years.

As to the paper itself, he felt he was unable to discuss it, as he had had no experience along these lines. Nevertheless he was grateful for such a paper, which had put the matter in a very stimulating way.

Prof. AUGUST WIMMER (Copenhagen) said he had long been an admirer of Prof. Spielmeyer, and he regretted that the second volume of his work had not yet made its appearance, *i.e.*, the book dealing with the histo-pathology of the nervous system. He was also much depressed, more so than the colleague who had just spoken, Dr. Henderson, because he gathered from this lecture, as from another very important lecture which Prof. Spielmeyer gave, on the acute infections of the central nervous system, that the latter was a little more sceptical as to the value of histo-pathological changes in the brain than might be supposed. The Professor had gone through the anatomical evolution; he had known what was called "brain mythology," and he had tried to react in a true scientific manner against the superstition that mental changes might be explained by histo-pathological changes in the brain. He was a very careful man, and he did not tell more than he felt was absolutely true. That was why Prof. Spielmeyer said that the brain was very sensitive to all sorts of influences, and that there might be pictures which were so alike that one was unable to say what was the cause of the lesion. That was why one could never tell by a histo-pathological picture whether it was specific to or characteristic of any particular disease. When one found a slight alteration in the temporal lobe, one could not tell whether it was a cause of hallucination. Naturally it was necessary to work with anatomical research, but it should not be forgotten that one had also to work with psycho-pathological researches. He, too, had tried to work a little along anatomical lines. He was a physician, and he had just realized that the most recent experiences, *i.e.*, in connection with encephalitis, had taught that the physician could not get along with a mere one-sided examination of his patients or of their brains. While there was an anatomical lesion, there was also a physiological or a physio-pathological reaction of the brain tissues and the different systems of the brain. That was why localized lesions, like necrobiotic foci, were inadequate to explain the patient's trouble.

Therefore he did not advocate the one-sided study of mental disease; that had been done in Germany, but one should not be too much impressed by these findings. Those anatomical lesions had been found before, and the people who had been working at the subject had attempted to deduce so much from the anatomical lesions that they had made many mistaken suggestions.

One could feel safe about psychology in England, for it was one of the most common-sense psychologies in Europe. The old English and Scottish psychology did not become ill-balanced. The English also had a very common-sense view as to the more material basis of human life, and if those two were combined the English psychologists should get along very well. In this university city there should be a close co-operation between laboratories and clinics, and he understood from the programme to-day that work was being done on those lines. What he was saying was really an appreciation of the way in which those engaged in this study were working in England; it had some relation to the strictly scientific question which Prof. Spielmeyer had brought forward.

Dr. W. F. MENZIES (Cheddleton) said he did not know whether Prof. Spielmeyer was more to be congratulated on the ease with which he came and explained so fully in our terrible English language all these changes in the brain, or on the clarity of his staining. The speaker had never before seen the layers of the cortex brought out in a microscopical slide with such clear differentiation.

If one believed that the basis of mental action was association, one must also believe that mental confusion proceeded from dissociation, in the widest sense, not only psychological, but anatomical; and for many years those engaged in the work had been acquainted with the clinical symptoms—for instance in organic diseases—of slowly onsetting dementia. They had usually been thought to be due to multiple thromboses, and in functional lesions one had seen partial recovery from widespread hemiplegia, what one used to call "brain paralysis." But the Association had not previously had a demonstration anatomically of these minute foci. If these existed all over the brain there was at once dissociation, so that one could say that association had been lost. One of the slides showed it was not a larger

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vessel which was affected, but a venule and an arteriole. He would like to draw special attention to the importance of that. One had considered anoxæmia or some troublesome form of loss of oxygen by a neuron as producing this dissociation; but now one saw a paralysis of the capillaries, and, associated with it, one must take note of the possible action of histamine and other paralysing chemical substances. So that it was apparent there was an anatomical basis for such progressive dementia, possibly consisting of many thousands of these extremely minute foci.

Dr. F. A. PICKWORTH (Birmingham) here interposed with a lantern demonstration of pathological processes at the base of the skull and brain in mental disorders.

He said: I should like to thank Prof. Spielmeyer for his most interesting paper. Areas of deficient Nissl staining in the cortex, not due to artefact, have also been repeatedly observed by us at Birmingham. These are in our opinion due to actual pathological changes in the small arteries, and not merely due to "functional spasm" as Prof. Spielmeyer has put forward. Pathological spasm must necessarily have a pathological cause, and as an indication of what these changes are I propose to show you some lantern-slides illustrating early and late arterial changes found in cases of mental disorder:

(1) Empyema of sphenoidal sinus associated with atheroma of the circle of Willis. The internal carotid artery is, as you know, in close and extensive relation to the sphenoidal sinus. It is believed that these associated conditions are causally related.

(2) Atheroma and partial occlusion of the right internal carotid artery of another case associated with sphenoidal sinusitis, meningeal adhesions in the middle cranial fossa, and extensive brain degeneration of vascular origin (coloured sketch shown).

(3) Streptococci in the sphenoidal mucosa growing along the longitudinal axis of a vessel.

(4) Diplococci in a pituitary gland vessel.

(5) Streptococci in the vessel wall in the midbrain of an acutely excited case of dementia præcox dying of exhaustion.

The latter especially shows us that not only toxins but organisms may occur in the brain; and I suggest that the changes produced by the disintegration of these organisms are among the first causes of localized deficient blood-supply, resulting in anoxæmia, inadequate removal of waste products, and loss of function of brain tissue, which may progress to a loss of Nissl substance and even nerve-cell destruction, such as Prof. Spielmeyer's slides have so ably illustrated.

Prof. SPIELMEYER, in reply, said it was very nice to have Dr. Pickworth showing his findings by means of the slides he had projected on to the screen. Sometimes streptococci were seen in cases in which disease had made very rapid progress, yet they produced no effect on the nervous tissue until the disease process had become very severe in the ganglion cells. Streptococci did not produce real and evident reactions. He saw the same thing in cases which Rosenow showed him in the Mayo Clinic.

He had been very glad to hear Dr. Menzies mention the importance of capillary spasm and capillary paralysis, because he, the speaker, forgot to speak about that. It was gratifying that his pictures were sufficiently clear to enable that conclusion to be drawn, and he agreed with Dr. Henderson and Prof. Wimmer. In the last few years he had been, for his own purpose, an *advocatus diaboli*, but he had been compelled by efforts in his own field to adopt the views he now held. Prof. Wimmer mentioned brain mythology, and that was not yet over; from time to time there were evidences of its reawakened activity. He did not despise that point of view, but very often—oftener than was thought—the anatomists did not see the limits of their thesis. It was so very necessary that the anatomist should not think of his own work alone and of his own point of view alone. It should be evident that pathological solutions did not lie in one field only; pathogenic processes must be explained as well as last causes. Therefore, during these latter years he had been emphasizing the necessity of explaining the last findings, not trying to draw conclusions on ætiology. Kraepelin said that to describe a disease entity one must know the pathology, the symptomatology and the pathological anatomy. But it was impossible for one man to make original studies in all those fields; each worker must do his best in his own department. He thought that often, nowadays, such highly specialized work as he did was looked down upon, and sometimes discontent was justified if the investigator lost sight of the ultimate aim. Therefore

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he contended that all this partial science must be arranged around a common centre, and in this arrangement the clinician, the anatomist, the chemist, the psychologist must supplement each other's activities; and perhaps in these circles representatives of all nations should meet each other, for one nation was more equipped for one kind of work, another nation for another; the method was chosen by the particular people. He felt that the aim would best be achieved by such an international co-operation.

18. PAPER.—**"Sedatives of the Central Nervous System,"** by JAMES ANDREW GUNN, M.A., D.Sc., M.D., Professor of Pharmacology in the University of Oxford.

Dr. GUNN said: I hesitated about talking to you on the subject of my address, but I am encouraged to do so by what I heard of the last paper. It was a plea for closer co-operation between the clinician and the pharmacologist and the other workers in medicine. Nothing could have pleased me better than to hear Prof. Spielmeyer say how difficult it is for one man to cover the whole field of pharmacology. This has now become such a specialized science that it takes all one's energies, and it is impossible for one man to cover more than a small field.

I have thought for a long time that a man who was intending to go in for nervous diseases might do worse than spend a year or two going carefully over the action of drugs on the central nervous system. The opportunities are great. One can get by means of drugs almost every kind of alteration in the central nervous system: one can duplicate the effects and get the same effects with the same dose every time; one can get hypnosis, tetanus, nystagmus. With one drug I had it was possible to produce an attack of epilepsy; if you gave it intravenously to a rabbit it would have a typical epileptic fit, which would last a minute or two, then the rabbit would get up and eat cabbages. By giving the drug hypodermically or by the mouth one can prolong the convulsions produced by it. There are opportunities for investigation which would repay anyone who could start early and continue with it.

I wish to say something about the selective action of drugs on the central nervous system, and especially about the sedatives which act on the motor side of it.

Drugs produce their effects by a chemical interaction between the drug and the tissues. And it is not surprising that a drug should act rather on muscle than on nerve, because the chemistry of muscle is so different from that of nerve. Therefore one is not surprised to find that pituitary extract acts on involuntary muscle, and that it has hardly any action on the central nervous system; whereas strychnine acts on the latter and has practically no action on muscle. The basis of therapeutics depends on the narrow selective action of drugs.

Taking the central nervous system, I commonly tell my students of the examples of general anæsthetics. They are taken to act more or less on all parts of the central nervous system; but if they acted equally on all parts of that system, that would be useless. Chloroform and ether anæsthesia knocks out the brain and consciousness and the spinal cord and abolishes the reflexes, but leaves the medulla intact. Otherwise the respiratory centre would be paralysed and the patient would die. Chloroform is regarded as having a very slight selective action on the central nervous system; but its use depends on its having a certain amount of selectivity. In the case of most drugs the selective action is much greater. Apomorphine will pick out the vomiting centre before it touches anything else, and long before it affects the vasomotor centre. Morphine acts differently from other anæsthetics, but it is not so well known that its effect is not like that of general anæsthetics; it is of the order of brain, medulla and spinal cord selection. With morphine the spinal reflexes are often brisk. It is a different type of selective action on the central nervous system. We have no knowledge yet of the chemical basis of the selective action of drugs; we do not know why strychnine acts on the cord, nor why chloroform acts on the brain and cord rather than on the medulla. When you think of the extraordinary complexity of the chemistry of the cell and the complexity of a molecule like strychnine, it is not to be wondered at that strychnine should pick out one cell in preference to another.

There is a general point worth remembering, and that is, the simpler the molecule, the less selective action there is likely to be. Chloroform is relatively simple, so

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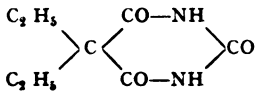
is ether, and it is more likely to act on the central nervous system with the same concentration than anything else with a specialized molecule, like hyoscine. That is an important point, because the investigation of the action of hyoscine is more difficult than is the investigation of the action of chloroform.

So, as we cannot give a chemical explanation for the action of drugs—or at least the explanations we give are only tentative—knowledge of the action of drugs on the central nervous system is meantime descriptive; we can only say what happens, and the order in which different parts of the nervous system are affected, but we do not know why it is so. It is a crude distinction between the sensory side of the brain and the motor side, and it is one which can be misleading; but for certain purposes it is of great practical importance. In some conditions it seems that it is the perceptive or associated side of the brain which is excitable, as in insomnia; whereas in others it is the motor side which is hyper-excitable, as in eclampsia, chorea, etc. It is evident that one should try to find drugs which will act on different parts of the brain. We do not want a common sedative for all those things, and experience has picked out certain drugs which are useful for certain purposes. I will illustrate that by the veronal group. The chemistry of those drugs is perhaps familiar to you. This is the formula:



You can alter this as much as you like; you can put in methyl, or butyl, or phenyl, and can change any or both of your mixtures. Many of our hypnotics are produced by ringing the changes on those groups. Many sedatives have been introduced; barbituric acid and veronal are the best known. I want to make this point: that, generally, they are similar in action, or they have a very close resemblance in their action in animals and man, but they do not act identically. I make a plea, and it should be done in pharmacology: that is, for a closer description of the effects of drugs on man when they are observed in action. I do not see anything of practice in a direct way, and when I look out a book to find a description of the effects of veronal on man, I find it is difficult to get such a description. The reason for that is not far to seek. Most people think it is not very important; and so if a doctor observed a small point in regard to the effect of veronal on the nervous system he would not think of writing a paper on it, nor would be even think it was worth while to mention it. Therefore I ask anyone who has noted anything about the behaviour of these drugs to publish it—you can blame me if you like! One can illustrate the importance of these differences fairly well with this group, in which I compare veronal and brominal, and luminal. When luminal was first introduced it was brought out as a substitute for veronal. It has the phenyl group instead of the ethyl group. It was found to be physiologically more active, but, apparently, very much the same in its effects. Some people have the idea—I do not know how they got the idea—that because the required dose of a thing is smaller, it is therefore safer, and manufacturers are not above trying to encourage that belief. When heroin was brought in, a point made in regard to it was that far less of it was needed, but it is actually more dangerous than morphine. Luminal is more dangerous than veronal. The smaller the dose, the more poisonous it is, and the more care you must take in regard to it. When people began to use luminal in man they saw that it did not act quite like veronal. You will know that it has been pushed over from applying it to simple insomnias to its use in diseases in which there is hyper-excitability of the motor side of the brain—epilepsy especially, and delirium tremens, chorea, etc. And recently someone has extended it to another condition, showing that these substances are all of a piece. It is valuable for a condition we do not often see, and that is the severe form of hiccough, which is a serious condition when it does occur. It is, whatever its origin may be, an explosive motor condition. It is a spasmodic action of the diaphragm, and from what one knew of luminal one would expect it to be successful in hiccough, and it is almost a specific for it; certainly it is better for it than anything else which has been tried. There are not many cases recorded of poisoning with luminal, but a case was brought to my notice not long ago which was absolutely typical of it. A lady had been having

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luminal for *petit mal*, 3 gr. in 24 hours. It is curious that there could be chronic poisoning with only 3 gr. in 24 hours. It is not safe to stop giving luminal suddenly; it is more dangerous to do that with luminal than with the other hypnotics. But you can get rid of the symptoms of it by decreasing the dose slightly. This lady had symptoms of chronic luminal poisoning, namely, motor paralyses; there was not much sleepiness. The actual symptoms were diplopia, difficulty in speech, difficulty in writing, difficulty in gait. I suggested that it would be better to restrict it to 2 gr. a day. That was done, and in a week most of the symptoms had disappeared, and in a fortnight all had disappeared except the writing disability; and two or three others who have described chronic luminal poisoning say that the difficulty in writing was the last to go. I have said that luminal selects the motor side. It is not an accident that it is those muscles which are affected, as they are the ones of late development; gait and the upright posture are rather late muscles to come into action, so are writing and speech.

I thought I might also say something about hyoscine. The action of this on the central nervous system is different from that of morphine. Hyoscine will depress and excite the motor cortex; morphine has little effect on the motor areas. It is not long since I was asked why morphine was not very effective in manias and motor excitements. It has not that kind of action, though it will have that action if the dose is pushed. Hyoscine, however, does act in that way; in man, long before there is relief of pain, there is restriction of movement, relaxation of muscles, etc. I am more interested in the use of hyoscine in Parkinsonianism. I do not know what is the anatomical lesion in Parkinsonianism, but hyoscine has the extraordinary effect of producing marked improvement in the psychic condition, though it has not much effect on the tremors. Naturally it is not a very satisfactory remedy, but I do not suppose any remedy can be very satisfactory, nor that any remedy will cure the condition; we can only hope for palliative effects. But if you can procure relief of the symptoms, even for part of a day, it must make an extraordinary difference to these afflicted people. People have been looking for a substitute for hyoscine, to get something which would influence the tremors, also to give a more prolonged effect, as that of hyoscine is fairly evanescent. Something was wanted which would last longer and which would get rid of the peripheral symptoms which are caused by hyoscine, such as dryness of the mouth, the pupillary action, and so on. A drug which has been tried, but has not been in the market long, is harmine. It comes from the seeds of a plant which grows in the sub-tropical regions surrounding the Mediterranean. There are two alkaloids in the plant: one is harmaline, and that is one of the first drugs I worked on twenty years ago, and I wrote a thesis on it. I think I investigated another four alkaloids of the group. I described that drug and its effect on the central nervous system of animals. I did not then know anything about Parkinsonianism, and if I had I do not think I could have taken the leap from its pharmacological action to its therapeutic use, because I do not know the cause of Parkinsonian symptoms. If one did it would be easier for the pharmacologist to say whether this drug might be useful in Parkinsonianism.

There is another drug, which comes from a different plant, and which has an action on the central nervous system. It is called banisterine. The use of this in Parkinsonianism was suggested. It was tested clinically, and was found to have a marked effect on a whole lot of nervous diseases, and that it relieved Parkinsonianism. It was found that harmine and banisterine were of the same chemical composition, and were identical. But banisterine was hard to get, as the plant was rare. Harmaline is on the market in America and in this country, and it is now being tried more fully.

There is a considerable difference, apparently, between the actions of harmine and hyoscine on the central nervous system. You may find that veronal and luminal act very similarly on the kidney, and if you did not experiment you could not distinguish one from the other. But when you use them on animals of higher development, and in man, you find they have different reactions. They have the same peripheral effect; there is no dryness of the mouth, etc., produced; but clinically this drug was found to relieve the spasticity of the muscles, though it did not affect the tremor, and had no effect on the central condition. In patients you could get a freer play of the muscles after injection of harmine than after hyoscine, but the patient did not feel so well. I asked a distinguished physiologist

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on the nervous system how he thought hyoscine acted, and he replied that it acted peripherally. It may act there, but it cannot be that it acts solely there, because you would not relieve the psychic condition by causing only an action on the peripheral muscles. With harmine you can get the same effect on the muscles, but the man does not feel better. So the effect on the muscles and the psychic effect are different things. I am therefore certain that the action of hyoscine cannot be peripherally on the muscle. In lower animals, rabbits, mice, etc., the symptoms produced by those alkaloids are symptoms of irritability of the central nervous system rather than depression. They get chronic convulsions, followed by paralysis, and it is difficult to tell whether the convulsions are due to definite stimulation of the lower part of the brain, or whether they are due to paralysis of the upper part of the brain. But very likely they are of normal type—chewing movements, nystagmus and running movements; they are released by paralysis of the higher, the inhibitory parts of the brain. One of the alkaloids, harmalol, shows a small change. This produces paralysis without chronic convulsions. If I knew more about the rigidity in eclampsia, and more about the central nervous system altogether, I could probably tell whether this would be better or worse than harmine for the treatment of rigidity. But it cannot be the same. And if it happens that its action is shifted a little, one may be able to relieve the symptoms better and for a more prolonged time with harmalol than with harmine.

There are two things that I would like to see. One is a closer observation and more accurate description of the actions of drug on the central nervous system in man. I think that every small point would help in locating their action. And, especially in recent years, we want to go over all the pharmacology again and describe the actions of all drugs more carefully. If you take chloral, bromides, veronal, luminal, and work out the minimal lethal doses, you will find that in animals the ratios are all different with those alkaloids. And you may take it that if they do not act on animals alike, they do not act on man alike. In twenty or twenty-five years' time, when people look at our descriptions of the actions of these drugs, they will appear to them to be very crude. I feel there will be a great advance in this, and I endorse what Prof. Spielmeyer said; not only in pathology, bio-chemistry and medicine, but also in pharmacology and medicine, we want a far closer co-operation between the practitioner and the man who is working in the laboratory. When I was a student in Edinburgh, twenty-five years ago, every Chair in the Medical Faculty had to be occupied by a man who had the M.D. degree; that applied to chemistry, zoology, medicine—everything; it was a condition of the foundation of the chair Then the occupants of the chairs of physics and chemistry, then the chair of botany and biology, and now the bacteriologist, may be men who have not the degree of M.D. And I think that is bad for medicine. I tell those who come to consult me on bacteriology and pharmacology that they should be general practitioners for a year, as that will knock all the nonsense out of them. Such a man will have training in observing patients and the effects of treatments which he could not obtain otherwise. And unless we have a closer co-operation between these sciences and medicine, we shall very likely make some very bad mistakes.

The PRESIDENT said he did not know whether members present would like to discuss this very interesting lecture, but he was certain there were many who would like to ask questions on it. He, the President, had always, clinically, maintained that the actions of hyoscine and morphine were entirely different from the standpoint of mental excitement. He had seen too many cases in which morphia had been pushed and the patients had been immensely confused afterwards; but he had never seen a case of excitement in which hyoscine caused the same condition. He only mentioned that because Prof. Gunn had shown that it was necessary to know more about the action of drugs and their reactions. He, the President, was once attacked because he said it was better not to use so many drugs until we knew a little more about the action of them. It was a gentle hint to their Research and Clinical Committee that they should try to supply some of the data which Prof. Gunn had suggested would be of value to pharmacologists.

Dr. E. W. TAYLOR (Islip) said he would like to know what Prof. Gunn thought of the dosage of hyoscine.

Prof. GUNN, replying to Dr. Taylor, said he would like to tell a story about hyoscine. After he qualified and became interested in pharmacology, he got the feeling that in many cases absence of effect from drugs was due to the doses given

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not having been sufficiently large. He was spending a holiday in Scotland when a man was brought into the village in a condition of *status epilepticus;* he was having practically continuous fits. First, he took off the man's boots, so that he did not do much damage. He had heard something about hyoscine, and he asked the doctor whether he had got any. His reply was, "Yes, I have got it, but I have never used it." The Pharmacopœia dose was $\frac{1}{100}$ or $\frac{1}{200}$, and the speaker suggested that the man be given $\frac{1}{25}$. That was given, and he had never seen such a dramatic effect from a drug in his life. He thought he had killed the man. He was motionless, and had a beautiful sleep for twenty-four hours, and when he awoke he had no more symptoms.

It had been said that there was an idiosyncrasy to hyoscine, and he thought that was true. He saw more of that during the war than he had seen since. It was necessary to be very careful about the dosage. In a discussion the other day he suggested that cases of idiosyncrasy from it were becoming less common. Hyoscine was a very complicated drug, but it was easy to alter it chemically. He found one was giving different forms of hyoscine at different times; at one time one was giving $\frac{1}{50}$ gr. of a substance which was relatively inert, whereas $\frac{1}{60}$ gr. of the active product would be lethal. Some people had temporary excitement from the drug, just as after morphine.

That might be taken to illustrate the way in which pharmacology dovetailed into the clinical use of drugs. To most animals morphine was a powerful sedative, but it tremendously excited cats, which, under its influence, became wildly delirious. On his first day in a pharmacological laboratory he gave a hypodermic injection of morphia, and following it he had great difficulty in catching the cat again. That showed that cats had a nervous system which differed from that of rabbits. One found that some animals showed excitement under the influence of morphine, while others showed depression under it. Some human beings were like cats in this respect, others were like rabbits. Probably not more than one in ten thousand human beings was excited by morphine. There was also an idiosyncrasy to hyoscine; in some people it produced at least a temporary stage of excitability. He advised students that if they had not had the particular patient before they should not start with more than $\frac{1}{100}$ gr.; there had never been a fatal case following the giving of that dose. If in such patient there was no hallucinatory sequel, $\frac{1}{50}$ or $\frac{1}{25}$ dose could be given. The effect was far more uniform with hyoscine.

Dr. D. K. Henderson (Glasgow) asked whether there was any particular object or advantage in using what was frequently employed, the hyoscine compound A or B.

Another point concerned the connection between veronal and luminal. He did not think there was any doubt that luminal was much more toxic than veronal, and he had for that reason avoided using luminal except in epilepsy. For the latter it certainly had its value. In seeing cases in consultation outside the hospital he found a surprisingly frequent use of luminal, general practitioners using it for mental disturbance in preference to other drugs, and in heroic doses, namely, 3 to 5 gr. The effect often seen in consultation was very bad, patients complaining of dizziness and of the motor symptoms which Prof. Gunn had indicated so well.

He thought that a discussion of this kind, pointing out how important it was that luminal should be employed with great care, was very beneficial.

Prof. Gunn, in reply, said there was a definite benefit from using the compounds spoken of by Dr. Henderson. The commencement of the making of these compounds was due to an error—for example, the use of atropine. Experiment showed that the inhibitory action and early death in chloroform anæsthesia were due to vagus inhibition. Drugs were given to prevent that, drugs which had to be given before chloroform was used. Atropine was also used in association with ether anæsthesia in order to check the extra secretion from the bronchi. Later, morphine was added too, the object of this being to produce a sedative action in addition to the action on the bronchi. When hyoscine came in it was found to be a better depressant of the central nervous system than atropine. Hyoscine exerted an action on the vagus, and if one used morphine and hyoscine, a double action was produced on the central nervous system. His belief was that one obtained better effects from hyoscine and morphine than from either of those agents used alone. There seemed to be no good effect from adding atropine.

Dr. Douglas McRae (Ayr) remarked that Sir Thomas Clouston, fifty years

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ago, deprecated the use of morphia in cases of maniacal excitement. He would like to know whether Prof. Gunn could say what was the reason why hyoscyamine went out of fashion. Thirty years ago it was used a good deal, and it caused a much more depressing effect than hyoscine. It was used for a certain type of case, namely, that which was maliciously violent and purposely brutal in conduct. Those patients were injected with hyoscyamine, and they frequently became paralysed throughout, and yet they lay perfectly conscious. As soon as a patient's paralysis passed off he would say, "For God's sake don't give me that injection again."

Prof. GUNN, in reply, said he did not think he could answer Dr. McRae's question with certainty, but he could throw some light on it. Atropine was a mixture of two opposites, dextro- and lævo-hyoscyamine; there were slight differences between them, and they were difficult to separate. They did not keep well. Hyoscyamine was in the Pharmacopœia last time, but it was not included in the latest issue. No sufficient reason had been shown for retaining hyoscyamine in preference to atropine. He thought dextro- and lævo-hyoscyamine should be tried separately.

MORNING SESSION.—THURSDAY, JULY 3.

At the Sir William Dunn School of Pathology.

The President in the Chair.

21. PAPER.—"Alzheimer's Disease," by DAVID KENNEDY HENDERSON, M.D., F.R.C.P.S., and Miss SARAH MACLACHLAN. (*vide* p. 646).

Dr. K. O. NEWMAN (Oxford): Morbid histology, as represented by the researches of Prof. Spielmeyer and his school, seems to lead, so it appears to me, towards a new development of pathological physiology of the central nervous system. I should like to take this opportunity to ask him if he agrees with a system of investigation which I have mapped out to myself, and which I should call the system of the "indicator method." By this I mean the application of definite experimental methods to direct attention to phenomena of the actual matter to be investigated which would otherwise remain hidden. I have used the gold sol method and surface tension estimation under definite experimental conditions as "indicator methods," and though my object was by no means to devise new "tests," it led to one, of which some of you may have heard. Some of the results I have obtained make me believe that the days of "cellular" pathology are drawing gradually towards an end, and that we may expect far-reaching results, particularly in the physiology and pathology of the central nervous system, from what I should like to describe as "molecular" pathology, towards which physico-chemical methods of investigation seem to lead.

Prof. W. SPIELMEYER (Munich) said he welcomed Dr. Henderson's paper, in which he had made a valuable contribution to our knowledge of Alzheimer's disease, and which would stimulate further studies on this morbid process. As Alzheimer's successor in the post of histo-pathologist to the Kraepelin Clinic, he, the speaker, had witnessed nearly twenty years ago the first steps in the discovery and delimitation of what was then a new clinical picture. Obscure cases which until then had passed as arterio-sclerotic dementia, or had to remain unlabelled, were cleared up by the finding of a definite anatomical process peculiar to them, and later it became possible to diagnose this clinically. The typical symptoms, those that set the standard for diagnosis, were just the ones that Dr. Henderson had described in detail. He had no doubt that the cases last described, which had not yet been verified by autopsy and histological examination, also belonged to this disease.

The anatomical changes which Dr. Henderson had laid before them corresponded in every way to the organic basis of the malady, and enabled one to lay down a boundary line as regards the differential diagnosis from other dementing processes occurring at senile or presenile ages. This held good not only as against arterio-

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sclerosis, but also and more especially as against the condition, much studied nowadays, of Pick's disease. Here, too, one often found, clinically, a combination of profound dementia with focal symptoms, but the microscopical changes were totally different.

So far, then, one had succeeded in separating out a few well-defined types from the large series of senile and presenile dementing processes, but there doubtless remained other independent disease-entities belonging to that group, and not included among those just mentioned. A question that had not yet been settled was that of the relation of Alzheimer's disease to presbyophrenia. They, the morbid anatomists, were inclined to consider Alzheimer's disease as a locally distributed and perhaps a precocious form of presbyophrenia, since the most striking histo-pathological findings were common to both conditions. Several clinicians, however, refused to recognize any such close relation, on account of the essential difference in the clinical pictures. Further investigations on the lines laid down by Dr. Henderson would help to solve these problems.

He was very glad to have the opportunity of answering the question which had been raised, because on the previous day, when his colleague, Dr. Wimmer, was a little depressed with regard to the speaker's system, he forgot to emphasize what he considered to be a very important point. It was this. Workers had to pass from their morphological pictures into the pathogenesis, and from the patho-genetic investigation into patho-physiology to see a little of the effects. He meant that although pathology was morphology, it should not remain at that stage. It was one's duty to try to explain what kind of physiological process might be behind the curtain. He was fully aware of the limits of his own morphology, and he knew there must also be the other forms of investigation. He was delighted with the investigations which Dr. Newman had carried out in the last two years, and he had proved his opinion by an arrangement with their own German Institute of Psychiatry; there they had worked in different departments, and had tried not to over-estimate one or other part of the examination. They tried to secure the co-operation of the experimenter, and especially of the physiologist.

Dr. Dove Cormac (Macclesfield) said he had always felt that there should be more co-operation between the anatomists, the physiologists, the psychiatrists and the pathologists, and he believed that a few years ago the psychologist, the anatomist and the physiologist in Manchester University did try to co-operate and correlate their subjects, but they were unable to come to any conclusion. Again, recently, he asked them to add him to their number and try to form some correlation on the subject; but each was so attached to his own subject that he did not seem to realize the importance of the other subjects. English people were rather slow in moving in these matters, whereas in Germany they seemed to have realized the importance of this co-operation.

Dr. J. R. Lord (Horton) said that the peculiar mental state commonly associated with chronic alcoholism was also seen in post-influenzal, puerperal, septic and other toxæmic cases. Possibly there was a second toxic factor common to all these cases. It was a striking experience to find cases of alcoholic confusion with fear and hallucinations getting better in hospital, and remaining so for a few weeks, perhaps months, and then having a recurrence of the same kind until a recurrent psychosis was established.

It seemed to him that there was a pathological process in Alzheimer's disease, and in pure senile dementia which was different to the arterio-sclerosis of old age. It was a more acute pathological process. William Hunter pointed out many years ago that patients with multiple cerebro-spinal sclerosis affecting the upper segments of the cord had mental changes. When septic foci, either dental, tonsil or in the nasal sinuses were removed, and affected muscles restored to activity by massage, etc., the mental symptoms cleared up.

Therefore the first point the speaker wanted to make was that these cases were examples of the selectivity of septic and other poisons for certain types of nerve-cells; just as the meeting was told on the previous day by Prof. Gunn that certain drugs had. So it came to the same problem—one of bio-chemistry. The normal senile processes in the brain should not be confused with the more acute processes in the senile psychoses. These must have a pathology of their own, and possibly one which could be linked up with Alzheimer's disease, or maybe with the toxæmias causing multiple cerebro-spinal sclerosis. He thought the damaging effect of chronic alcoholism on the nervous system was not that of

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alcohol only. As he had said, there was some other factor, probably septic, which was productive of the Korsakov syndrome, and accounted for the recurrence of *delirium tremens* in cases which had no chance of getting any more alcohol. He had known patients who for years continued to have typical attacks of *delirium tremens* long after they had been unable to get even the smell of alcohol.

He congratulated the authors on a very instructive paper.

Dr. S. J. COLE (Devizes) said that Dr. Lord's remarks encouraged him to call the attention of members present to a curious experience concerning the condition known as Korsakov's psychosis. He believed that a paper of his which appeared in the *Journal of Mental Science* many years ago was one of the first papers published in England on this subject. That subject also entered largely into the thesis which gained for him the degree of M.D. of this university. In those days he was on the staff of Colney Hatch, where he had the opportunity of seeing a number of cases of Korsakov's psychosis, and almost always there was as an accompaniment well-marked polyneuritis. He had been twenty-eight years at the Wiltshire Mental Hospital, and after his previous experience of this condition he thought he could take credit to himself as being a person not likely to overlook this condition when it came before him. Yet it was no exaggeration when he said that the cases of Korsakov's psychosis which he had seen in the Wiltshire County Mental Hospital in twenty-eight years could be counted on the fingers of one hand. It was not that alcoholic disorders were particularly uncommon in Wiltshire. Perhaps they were less common than in London, but they were not at all rare. Cases in which alcohol seemed to be the principal factor in the causation of the disorder were about 2% of the admissions, while the cases in which alcohol could be put down as a factor were about 7% to 10% of the admissions. That showed that the abuse of alcohol was not uncommon in Wiltshire, and yet Korsakov's psychosis was a rarity. He was not prepared to offer an explanation. The last case he saw which reminded him in any way of Korsakov's psychosis was one of fairly ordinary senile dementia in an old person. There was a rapid obliteration of impressions, but this was not a conspicuous feature in the picture, and he was not able to discover that there was any particular alcoholic history. But, even including cases like that, he did not think he was exaggerating when he said there were less than five such cases in all those years.

Dr. R. D. GILLESPIE (London) said that the late Sir Frederick Mott in this country anticipated the present movement from Germany, because he introduced considerable physiological speculation in connection with his pathological work. The accusation as to methods being antiquated was particularly hard in regard to Alzheimer's disease, because that disease was regarded as one of the principal triumphs of the histo-pathological method. He was told that Crinkler first differentiated these cases clinically, and got Alzheimer to work on them, and that worker described the changes. As to the fact that it had never been described in British literature, that might have been influenced by geographical differences in incidence of the disease. It was known that senile cortical deteriorations were more common in certain races than in others. Some American statistics had been published which suggested that such changes were particularly common in Irish stock. Ever since, ten years ago, Dr. Henderson drew his attention to Alzheimer's disease, he, the speaker, had been on the look-out for typical cases of the condition, yet since he left Dr. Henderson's hospital he could not say he had seen one. He had seen many cases of presbyophrenia in people of about thirty years of age, but none of typical Alzheimer's disease. So perhaps the reason for the absence of literature on the subject in this country was that cases of the condition did not occur here so frequently as elsewhere.

Dr. Henderson had confessed that he had great difficulty in distinguishing presbyophrenia from Alzheimer's disease, except that the onset of the latter occurred at an earlier age. That caused one to wonder whether Alzheimer's disease was so distinct a disease entity as it had been thought to be. Did the pathological picture make it worthy of distinction in that way? If there was something typical about Alzheimer's disease it was these cellular changes which had been described. They should be distinguished by focalization, but he did not think that had been described.

Dr. HENDERSON, in reply, said he was very glad that this paper had been the means of eliciting the discussion which had just taken place. He felt extremely grateful to all who had participated in it. Several points of interest had emerged.

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The condition had always been a puzzle; often it had been difficult to say, clinically, "This is a case of Alzheimer's disease." He considered that the point which Dr. Gillespie raised was important. He did not think so many of these cases were seen in general or in special practice as one was apt to see in a mental hospital. These were patients who would become very difficult under ordinary home conditions; and it was likely that when seen at home these cases might be confused with other conditions, such, for example, as arterio-sclerosis, or alcoholism, or any other toxic state. It was only after one had followed these cases over a period of years, or at least of months, that one could feel any certainty as to their diagnosis. It was, he contended, a specific condition. It was interesting that there should be a group of men, or women, at sixty to sixty-five years of age, people who had always led decent lives, as far as was known, and in regard to whom no particular extraneous element had come in—people who had been capable and efficient, and who suddenly, at that age, broke down with organic changes. These cases did not seem to be explainable on any vascular basis. Here one seemed to be dealing with some primary tissue alteration—whatever that might be. To find in people hitherto active and capable a sudden breakdown mentally, presenting a picture such as was expected at seventy or eighty, was an occurrence of very striking nature.

He expressed his gratitude for the way in which the paper had been received.

20. PAPER.—**"Temperament and Insanity in the Far East,"** by CHARLES GABRIEL SELIGMAN, M.D., F.R.S., Professor of Ethnology in the University of London.

[*Abstract.*]

Prof. SELIGMAN said that he approached the subject as an anthropologist rather than as a clinician, his primary interest being to obtain some idea as to whether Chinese and Japanese reacted to the stresses of life in the same manner as did Europeans. It was, however, first necessary to know something of the temperament of the people concerned. For the Japanese we were fortunate in having a number of estimates, the most important being that of Mr. Y. Okakura, whose conclusion that the Japanese are "a people of the Present and the Tangible, of the broad Daylight and the plainly Visible," with "a proclivity of . . . mind in favour of determination and action," was undoubtedly correct. No equally fair and unrhetorical account by a Chinaman of the Chinese temperament was available; there was, however, no doubt that the common European conception of the Chinese as unemotional and inscrutable was not generally true. Apart from the *literati* with their classical training, becoming continually fewer at the present day, and some of the more educated Chinese who modelled their conduct upon them, the people generally seemed at least as excitable and emotional as the North European. This was shown in everyday life by highly emotional conduct after family quarrels, with the frequency on such occasions of severe hysteria and even impulsive suicide.

Turning to insanity. In Japan the treatment of the insane was by Japanese doctors on western lines in well-arranged hospitals; in China treatment had had to all practical purposes been limited to Southern China, often in more or less makeshift hospitals supported and staffed by voluntary missionary effort. In both countries, although statistics for the most part applied to dismissals, there were some figures of admissions. Accepting the Japanese figures published, *e.g.*, for the Matsuzawa Hospital (near Tokyo), as correct, as also the percentage estimates formed by the practising physicians in charge of the Chinese hospitals, it appeared that cases of dementia præcox filled half or more of the asylum beds, there being a far smaller proportion of manic-depressive insanity. The figures for admissions to Matsuzawa Hospital during the years 1920–24 gave dementia præcox 48·6% and manic depressive 9·4%. The dementia præcox percentage suggested to the author by Dr. Young, at Soochow, was much the same, though it was true that the figure (dismissals 28·14%) quoted by Dr. Maxwell for the J. G. Kerr Hospital at Canton was lower.* Provisionally we might

* J. L. Maxwell, *Diseases of China* (Shanghai, 1929), p. 268.

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agree that dementia præcox was considerably more frequent in the Far East than among Caucasians, the figures for 70,987 first admissions to state hospitals in the U.S.A. giving 16,920 cases of dementia præcox* (23·84%) against the above quoted rate of nearly 50% in the Japanese, which might not be very different from that in the Chinese.

As regards types of dementia præcox, while conditions of excitement and maniacal outbursts occurred both in Japan and in China, the author's informants generally judged these to be rarer than in Europe. Perhaps a relative infrequency of violent outbursts in this disease, together with a relative tractability as compared with the Caucasian, was general for the Yellow Race. In Java, Dr. Van Andal, in charge of the asylum at Magelang, stated that it was not only in dementia præcox that his patients were less violent than Europeans, but that throughout the institution the patients were more tractable than similar cases would be in Europe.

For general paralysis of the insane the admissions to Matsuzawa Hospital in the years 1920–24 showed 851 cases, *i.e.*, a percentage of 30·63—nearly three times as high as that of 11·05 quoted by J. V. May for the State hospitals of the U.S.A.† In China the majority of clinicians regarded general paralysis as relatively infrequent—a surprising fact if confirmed by further investigations, for there could be no doubt that many Chinese towns were heavily syphilised, indeed Maxwell's conclusion of a 15% incidence of syphilis, with nearly twice that figure among the troops,‡ was probably reliable.

The usual mixed forms of delusional insanity occurred in the Japanese and were not especially rare. Patients considering themselves members of the Imperial House were to be found in the larger asylums, and electricity and wireless exerted their influence on the inmates just as in European countries; on the other hand true paranoia was said to be extremely rare, and there were, moreover, certain differences in forms of insanity in Japanese and Europeans depending directly on social factors. In Japan religion was never gloomy, so that it was not surprising that deliria with religious content were extremely rare; again, since practically every girl married there was almost a complete absence on the woman's side of thwarted desire and over-estimated virginity, real or lost. "Possession," which could scarcely occur in a north European asylum, was by no means rare in Japan. The "possessing" animal or spirit was nearly always the fox, which played so large a part in Japanese folklore, and in severe cases the patient might regard himself not so much as possessed by a fox spirit as by the animal itself; the less severe forms of fox possession, indicated by a mild hysteria, were common throughout the country, and practitioners of healing whose power was due to their command of a fox spirit were numerous, and played a definite part in the life of the poorer populace of the large cities.

Dr. D. K. Henderson (Glasgow) said he felt rather diffident about taking part in a discussion after such an extremely interesting paper. The only work he knew that had been done on the characteristics of different races was that of Kirby in America, where there were so many races that opportunities were afforded of studying their peculiarities. There was no doubt that from the point of view of race temperaments, different peoples tended to react in rather specialized ways. That was seen in what Prof. Seligman said as to the absence of melancholia in the Japanese and the Chinese. In Scotland one of the striking characteristics among the people was the large number of melancholic patients in the mental hospitals. Nearly all the patients coming from the Orkney and Shetland Islands suffered from that type of mental disturbance.

Another interesting point in the paper was the reference to the absence of katatonia. The Professor had emphasized that, particularly in the case of the Chinese, we were dealing with people who suffered, apparently, a great deal from states of increased suggestibility. In listening to the paper it seemed to the speaker that the absence of katatonics might be explained on these grounds. He asked whether in those races there was a preponderant increase along the lines of dementia præcox simplex, rather than of the more highly determined states which were found in katatonics. This would correspond with the occurrence of dementia præcox simplex in association with states of increased suggestibility such as one

* James V. May, *Mental Diseases* (Boston, 1922), p. 457.
† *Op. cit.*, p. 306.
‡ *Op. cit.*, p. 507.

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found in connection with mental defect. In our more simplified types of person there was this increased suggestibility which Prof. Seligmann had pointed out as being a characteristic of the Chinese.

He had also been much interested in the question of the predominance of general paralysis. A very striking feature was as to why there should be such a high percentage—30%—in the Japanese, and a comparative absence of it among the Chinese. In European races the American statistics showed that the amount of general paralysis in the German races was much higher, in New York, at any rate, than that of any of the other race-groups which were studied there.

He thought that work along the lines which Prof. Seligman pointed out this morning from the point of view of racial characteristics and statistics was extremely important, and he felt much indebted for the information.

Sir JOHN MACPHERSON (Bristol) said there was no excuse for his intervention in this discussion, but the President had made a definite sign of invitation to say something. With others, he had been intensely interested in the extraordinarily minute description which Prof. Seligman gave of not only the family, but the temperamental differences between inhabitants of the extreme East and ourselves, and between the Japanese and the Chinese. One thing the professor said about the Javanese which he did not think was quite correct. He remembered Prof. Kraepelin's description—and he supposed it was to him Prof. Seligman referred —when he visited Java some years ago—(" Yes ")—and his recollection was that Prof. Kraepelin said there was a great deal of dementia præcox among the Javanese, and he was very interested to find it.

As to what Dr. Henderson said concerning manic-depressive insanity, and especially melancholia, among the Scottish people, Prof. Kraepelin was especially illuminating on that point as to depression among the Javanese. That authority said there was a good deal of it among them, but there was a complete absence of any idea of sinning; they were depressed, but without any idea that they were sinners. He, Sir John, did not think a European could be depressed without thinking of himself as a very bad person. He felt very grateful for this contribution.

Dr. J. NOEL SERGEANT (London) also wished to thank Prof. Seligman for this exceptionally stimulating paper. One statement he made was that the Chinese were extremely suggestible. Was that so through the visual channels? He was told that in China enormous importance was attached to the printed word, and that dirty fragments of such papers as the *Daily Mail* were carefully preserved. Another point of interest was the attitude of the Japanese towards religion.

Dr. F. G. GARDNER (Oxford) said that some of the characteristics, social and temperamental, were due to factors which the Professor did not mention, because they appeared to be trivial. The social ideas of the Japanese were different from what most people thought. In Japan the soldier was at the head of the social scale, as he was prepared to die for his country, next came the farmer who produced the necessaries of life, then the skilled artisan, lastly the mere trader—the middleman—who produced nothing, and as he had no status to lose, he sometimes took advantage of the fact in his dealings. One result was the employment of Chinese where money was concerned as being more reliable. For in China the social scale was reversed, the merchant being at the top, with centuries of traditional fair dealing behind him. The soldier was lower in the social scale. In Japan suicide amongst the higher classes was common in cases where honour was affected. Hara-kiri in such conditions was a virtue and the victim was regarded almost as a saint. As to mental conditions he was not able to say anything, but obviously these social gradations had a great bearing on the outlook of the people to their social, economic and temperamental relations.

Dr. R. D. GILLESPIE (London) said he owed Prof. Seligman a disclaimer and an apology. He did not help that gentleman, except to supply him with a book of statistics. It was said that only 25% of the cases in American mental hospitals were suffering from dementia præcox; he thought the percentage in this country was larger. Perhaps the Professor was quoting statistics of admission. (Prof. Seligman: My Japanese figures were admissions or dismissals; they were not permanent population.) Prof. Seligman had displayed great courage in undertaking this work; it was the beginning of something which would be the means of elucidating many problems which were now puzzling us, especially those concerned with the pathology of the psychoses. No very great help had been given

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by supplying data on temperament; this question was in the air, and he, the speaker, found that even Jung's notions were not particularly useful. There was another difficulty about the Japanese figures, and he did not think they were acceptable, especially as to the difference between male and female. Women insane patients in this country were more difficult to manage than male patients, but the Japanese found the reverse to be the case. The American population rate in asylums had gone up with the increasing provision of mental hospitals in that country.

Another point which struck him was the incidence of neuroses among various races, especially because in China everyone got married, and that should have reference to a remark of Malinowski's that he could find no neurosis among Trobriands, people who had had an untrammelled sexual existence from the earliest days.

Prof. AUGUST WIMMER (Copenhagen) expressed his regret that he did not arrive in time to hear the beginning of the paper. He thought that Prof. Seligmann's researches had a great bearing on our conception of the symptomatology of insanity. There was noticeable in Germany a tendency to attach greater importance to symptomatology. By such researches as those which had been put forward to-day one learned to be very careful about attaching too much importance to symptomatology, as it was influenced in so many ways by individuality and the particular surroundings of the person concerned. The same was seen in regard to historical researches on insanity; the mentality of such people as the ancient Roman emperors was a very different matter from the mentality we saw now; hence one could not draw definite conclusions as to the nature of the mental symptoms or disturbances which were found in ancient records. It would be very interesting if, in the Far East or in America, where there were so many races, researches could be made as to the value of the distinction made by Kretschmer. His own view was that people had certain trends, more or less pronounced, and that this was due partly to their education, to their special morals and ways of thinking, and not due to original congenital constitution.

He felt great admiration for the excellent paper which Prof. Seligmann had presented.

Sir JOHN MACPHERSON (Bristol), in supplement of his previous remarks, said he had seen an Austrian suffering from acute depression, and, remembering what Prof. Kraepelin said about melancholia, he questioned that man carefully, but could not discover that he had any idea about sinning; it was a pure depression, such as one might meet with in an animal.

Dr. NATHAN RAW (London) said he would like to ask the professor one question. He said that general paralysis in China had a totally different incidence from that of the same disease in Japan. The Association was told, at the last quarterly meeting, by a man who wrote a very interesting paper, that general paralysis was almost unknown in India and China, but that it was very common in Japan. He asked whether Prof. Seligman could say that malaria was more prevalent in China than in Japan. If there was a large amount of malaria in China, one could understand that it immunized or protected against general paralysis; and if the converse was the case in Japan, it would account for the enormous amount of general paralysis there.

Dr. J. R. LORD (Horton) asked, supposing that a far greater proportion of Japanese were housed in asylums, whether it would appreciably affect that admission figure of 30%.

The PRESIDENT wished to thank Prof. Seligman very cordially for his paper. As usual, that gentleman had taken refuge in his extreme modesty, and he, the speaker, was always rather chary of crossing swords with Prof. Seligman, as he did not feel certain how many traps he might have laid, especially for people of his, the President's, propensities. Still, there were one or two things to which he would like to draw attention. First he asked whether the lady who had the "fox possession" was a widow. He would also like to draw on the reader's experience, which was immense, to ask why it was that certain peoples or races preferred certain animals in their cases of animal possession. The Malay's great bogy was not the wolf or the fox, but the tiger. When Prof. Seligman was talking to the Oxford Psychological Society he said the tiger was the animal which not only possessed the adults, but also the children, in a game; a child was put in the middle and called "Tiger!" and then there was violent hysteria. As a sort of

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wild guess, the speaker suggested that the animal chosen was that which proved most inimical to their existence, either in the way of direct killing or removing necessary articles of food.

Another interesting remark of the Professor's was that the Japanese originated nothing themselves. One could not drive the Japanese into taking anything unless he wanted to; he took what he liked, and twisted it in any way he chose for his own purposes. If he did that in other things, his diagnosis might also be influenced by that fact.

That led the speaker to make two other remarks, on points which he was sorry the Professor did not touch on, though they were mentioned by Dr. Henderson. Was the Professor able to investigate the prevalence of mental defect among the Japanese? That had an important bearing on the question of dementia præcox simplex. Also, in regard to the Chinese and the Japanese, he would like to know what were their intellectual potentialities, and how this differed in the two countries. Mention was made of the necessity of having to persuade not only the patient but the whole household to get well, but the speaker did not know that in this respect it was any different in those countries than in England; his own difficulty sometimes was, not to get his patient well, but to get his relatives to believe that the patient could ever get well. In that respect, perhaps, the conditions were much the same the world over.

He had also felt much interested in the remarks as to religiosity breaking down, and the occurrence of a reversion to primitive types, because recently he had had an experience of that with an Ethiopian, who came originally from the States. He had been a sword-swallower and a fire-eater; and he had not only swallowed fire and swords, but also alcohol, and the latter had led him to other excesses, with the result that the man got well after a time following malarial treatment, and he was dominated by a certain religious sect, the most sanctimonious people the speaker had ever met. This patient rebuked every other patient, and was always "full of good works" until the other day, when he reverted to the primitive negroid man and attempted to slay him, the speaker and his colleagues, and manifested a great animosity against the teaching he had so fervently embraced before, and which was no more than a veneer. It was only by the observations of men like Prof. Seligman, who investigated every factor and brought these racial matters forward, that the specialty could hope to make advance in the science.

Prof. SELIGMAN, in reply, said there was not time to deal with and answer all the points which had been raised in the debate on his paper; one reason also was that he did not know the answers to all the questions.

He did not know whether the Chinese were more liable to visual or to auditory suggestion. In that country, however, there was a strong reverence for the printed word.

It had been said that the highest class in China was the merchant, but he did not think so; the scholar ranked very high, and the examinations for the ministry were long and difficult. The Trobriand islanders had full sexual licence for the time preceding puberty. In the villages, among the Chinese, there was a high degree of chastity until marriage. The Trobriands were not immune from neuroses; he knew one islander who had hysteria and practised genuine dissociation.

He did not know anything about schizoid conditions in the East. With regard to the Austrian lady who was very depressed and had no sense of sin, there could be a sense of depression without a sense of sin. There was a specific nostalgia in Melanesians; they said they would die, and they did die, and it was because they were away from their own country. One of the speaker's "boys" was ill and said he was going to die, and refused food. It seemed a typical case of nostalgia, but when he was stimulated he got over it. The speaker tackled him at once, and gave him a nasty effervescing mixture to take every hour. This caused him to think better of his resolution; he began to eat again, and finally returned to work.

The statement that general paralysis was very rare in China was made by many of the older clinicians, but it might be largely a matter of diagnosis; he did not accept the statement at its face value; it was very unlikely when there was such a prevalence of general paralysis in Japan. In spite of a large amount of old Ainu blood in the Japanese, he was basically Mongolian.

With regard to malaria, he was unable to give the facts at the moment. He investigated the matter, and concluded that the alleged absence of general paralysis.

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in China could not be due to the greater amount of malaria in the country, and he had opportunities of asking the question of experts in Java. The evidence showed that general paralysis occurred in people who had had opportunities of having malaria and who actually had had that disease.

He was unable to say anything about the distribution of different forms of insanity among the Japanese. The woman referred to as possessed by the fox-spirit was not a widow. She had a husband who ran a business, but he believed that the woman was the worker.

As to animal possession, tigers were all over Malaya, and he took it that there the tiger was the most dreaded animal. An interesting point occurred to him, and it indicated how right Dr. Good was when he said the fear was of the animal which caused the greatest destruction. He had had experience of a part of Central Africa where lions and game were common, but man-eaters were rare. It was dramatic to see the way in which the natives went about without fearing the lion; they walked about at night in the lion country, neither did they speak of the lion as an animal to be specially feared. It was a very different attitude from that of the Malay towards the tiger.

With regard to mental defectives in Japan and China, he knew nothing about this, except that in all the hospitals he saw there were a few extreme cases; they had been sent in because otherwise they would have been left to die.

LUNCHEON.

Members and their guests, at the kind invitation of the Chairman and Committee of Management of the Warneford Hospital, took lunch in New College Hall, Oxford, by permission of the Warden and Fellows. Dr. F. A. Dixey, Fellow of Wadham College, presided.

At the conclusion of an excellent lunch the Chairman said: The late Lord Beaconsfield, when he was Mr. Disraeli, used to say that he once had a conversation with King Louis-Philippe, in the course of which the King said he attributed the well-known political capacity of the inhabitants of these islands to their practice of making after-dinner speeches. But if the practice had been attempted after lunch, it probably would not have been allowed.

He intended to be very brief, but one or two things needed to be said. The first was, that on behalf of the Managing Committee of the Warneford he extended a most cordial welcome to those members of the Association who were present and to their guests. It was fitting that this meeting should be held in this Hall. On his right could be seen the portrait of a fine English gentleman, Dr. Powell. He, as Warden of this College, did his duty, and he was admirably succeeded by Dr. Spooner as Warden of the College and Chairman of the Managing Committee. It was a matter of great regret that the present Warden of this great College was not himself at this function, but he had sent a letter expressing his welcome to the members of the Royal Medico-Psychological Association, and stating that it was only because he had an engagement out of Oxford that he would be absent. But a good representative was present in the person of Prof. Margoliouth, whose name was well known wherever deep scholarship, whether classical or oriental, was appreciated. From the first this College had been connected with the fortunes of the Hospital, and he believed that the Warneford was also intmately connected with the foundation of the Royal Medico-Psychological Association.

And there was another reason why this company should assemble within these walls. In the last day or two he had been accosted by friends who wanted to know how to learn about medico-psychology. He replied that it was easy; that it was like the case of a man who wanted to know about Chinese metaphysics. He was referred to a volume on China and another on metaphysics, and told to combine the two. Inquirers as to medico-psychology should read up medicine, and then psychology, and combine the two!

He hoped the Association would not wait another eighty-two years before paying another visit to Oxford; when it came to this city again, he hoped some of its members would still be living.

Sir HUBERT BOND, *K.B.E.* (Commissioner of the Board of Control), in responding for the Association, said: It would be agreed that to be entertained in "New

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College" and yet to realize that they were lunching in one of the oldest colleges of one of the oldest Universities in the world sounded something of a paradox; no doubt one that, in relation to New College's well-known hospitality, had often been commented upon. However, this was no moment for paradoxes and subtleties; his pleasant task on behalf of the Association was to say "Thank you" for this generous hospitality; and in all truth he could say that none present would forget the delightful way in which they had been entertained or the enjoyment of this interlude—indeed a happy thought on the part of those who conceived the idea. Why so long an interval as eighty-two years had elapsed since the Association had met in Oxford might be difficult to explain; probably in part and in the main due to the fact that the annual meeting was generally held where the President's work lay. Undoubtedly, their hope was that no such comet-like interval would happen again, and a prompt acceptance of the next invitation to Oxford was a certainty. This gathering was very sensible of the kindness of the Warden and Fellows of the College in allowing members to hold part of their meeting here, and of the Chairman and his colleagues of the famous hospital which was visited on the previous day. From its commencement to its close, this meeting in Oxford had been a great success, and members of the Association would take away many charming memories, not least of them that of this afternoon. Naturally, it was of special satisfaction to them to see how greatly the man of their choice as President was esteemed by everybody by whom he was surrounded, and the solid support which had been given to him. He (Sir Hubert) would like to take note of the fact that in this company were representatives from the Dominions—Canada, Australia and South Africa—also from the United States, Denmark, Poland, Austria, Germany, Czecho-Slovakia and Switzerland; and he was sure that they, too, would take back with them equally pleasant memories, and that it was also their desire to tender hearty thanks.

GARDEN PARTY.

Members and their guests were entertained from 4 to 6.30 p.m. by Viscountess Harcourt to a Garden Party at Nuneham Park. Those present thought it a great privilege to visit this, one of England's most stately homes, full of valuable pictures and other works of art, and famous for its historical association with some of England's greatest administrators and ministers of State. Lady Harcourt received her guests and was indefatigable in entertaining them.

RECEPTION—9 to 11 p.m.

The Regius Professor of Medicine and Lady Buzzard were "At Home" to members and their guests at Magdalen College. About 400 attended. This was held in the famous "quad" of the College; light refreshments were provided under cover of the beautiful archway. The Vice-Chancellor and Mrs. Dudden were present as well as many of the University dons in their robes. The Band of the 4th Battalion of the Oxford and Bucks Light Infantry gave an excellent musical programme.

MORNING SESSION.—FRIDAY, JULY 4.

At the Sir William Dunn School of Pathology.

The President in the Chair.

22. DISCUSSION.—**"Out-Patient Clinics, with Special Reference to Psycho-therapy."**

The PRESIDENT said he had first to offer an explanation. One of the speakers, Dr. D. K. Henderson (Glasgow), who was to have taken part in the discussion had been summoned home on urgent business. His absence was regretted.

There was no need whatever for him to introduce the opener of the discussion, Prof. Robertson.

(Owing to the exigencies of space, the report of this discussion has been left over for the January number, where it will appear as an "Original."—EDS.)

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23. PAPER.—**"The Therapeutic Effect of Assisted Respiration in Established Cases of Dementia Præcox,"** by GORDON FRANK PETERS, M.B., B.S., M.R.C.S., L.R.C.P., D.P.M. (*vide* p. 662).

The PRESIDENT said he considered this experiment of Dr. Peters to be one of the most important things which had been brought before this Annual Meeting. The reason he would explain. The region of small pyramids indicated by the reader was, in all probability, the seat of what was generally understood as "intellect." It was generally admitted that the brain was developed from rudimentary processes upwards. Head and Rivers divided the brain into epicritic and protopathic regions; Watson, Mott and others had placed what were called "instincts" in the lower brain region. Intelligence consisted of the use of intellect *plus* experience.

Dr. Peters—rightly, in the opinion of the speaker—claimed to have brought about improvement in patients by means of artificial respiration. The blood-supply was derived, mainly, from the cerebral vessels *vivi* the pia mater. It was well known that the straight short vessels terminated in the grey matter, and that there was no anastomosis of the cerebral vessels. It was very necessary to have a good supply of blood to the whole of the brain. Patients with dementia præcox immobilized themselves, and by that means prevented a good supply of blood to the brain; therefore it was merely logical to suppose that the terminal vessels, being at the end of the circulatory circuit, would not, on account of the pump failing, get the normal amount of circulation. Movements aided in the excretion of what were called toxins, and if the circulation was diminished the toxins were unlikely to be got rid of either so freely or so completely; a highly-developed neuron would be most affected by such a toxin, and so would fail to react. By increasing the circulation by means of a more vigorous respiration, a better blood supply would be ensured to that area. Taking the technique called hypnosis, what one found was that there occurred relaxation and a better circulation. One of the methods of bringing about this improvement which was very useful was teaching patients how to breathe. What was not sufficiently appreciated was that one must get the patient in a semi-recumbent or a recumbent posture. Most people breathed with their lips slightly apart; by so doing one failed to fully expand the lungs. What was wanted, therefore, was to get the idea into the mind of the patient that he must let himself go and take a really deep breath, closing the lips, then count five, and then slowly expel the inspired air through the nose. After doing that six times consecutively one felt a sort of peace or sleep. It ensured a better discharge of residual and waste-charged air. Dr. Peters's method was very similar. One should explain to the patient what one was striving for. That supplied a link where the psycho-therapist and the physio-therapist—who should not be separate—came in. He believed that Dr. Peters was here on the track of something which ought to assist very much. He, the President, had himself been going to write a paper on the method, but the meeting would have judged from the papers in the agenda that his wish was that a wide view of the whole subject should be taken. His motto was: Say less, and do more.

Dr. J. R. LORD said the meeting could judge of the importance which he, the speaker, attached to this work which had been done at his mental hospital, from the fact that for years there had been held, at that institution, rhythm classes, physical drill, music, etc. Patients were arranged in rows, with nurses behind those that needed them. The nurses, in these latter cases, did the active movements, and many of the patients in due course responded actively. Improvement, both physical and mental, followed in many instances. He had always maintained that it was of no use attempting occupation therapy while patients were "blue"; it was essential that these patients should have in their brain properly oxygenated fluids before psycho-therapy or occupational therapy were tried. These classes in his hospital had been popular and were well attended. Dr. Peters had systematized this treatment, and ensured first that the patients had a good supply of well-oxygenated blood to the brain, using as a preliminary Sylvester's method of artificial respiration. Either musical exercises, or something akin to that, immediately followed. Other forms of exercise were gradually, introduced and then light domestic work. Then came either industrial or clinical occupational therapy according to the type and duration of the case.

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The treatment had proved a success because of the personal element in it. One could very readily by laboratory methods oxygenate the blood, but neither the patient nor the nurse would have any active interest in it and their co-operation would not be needed. Dr. Peters's method was a strictly nursing procedure and the staff had taken a personal pride in the work.

It was a great score to have all methods of treatment as far as possible within the personal ambit of the nursing staff.

24. Votes of Thanks for Hospitality.

Dr. Bedford Pierce said he had a pleasant duty to perform: it was to propose that the Association send a letter of thanks to those who had so well entertained its members and given them the benefit of such remarkable hospitality. Not only had the hospitality been abundant, but there had been about it a gracious kindliness which had appealed to all. The very fine weather had helped, the geniality of the President had helped, and the hosts and hostesses of the Colleges had contributed greatly to the enjoyment. If it could be done, he would have liked the message to include those—whose names the members did not know—who had taken such a helpful part in organizing this annual meeting.

Dr. J. R. Lord seconded the motion. **[Agreed.**

The President, in the name of all concerned, thanked the speakers for this vote of thanks. It was very gratifying that the people who had done the hard work necessarily incidental to such a meeting should have received such a nice recognition. Oxford was only too pleased to see the members of the Association, and it was a great pleasure to him to find everyone so pleased. He would like members to know that Sir William Morris kept his works going the whole afternoon so that members could look over them; otherwise they would have closed down at one o'clock. That action on the part of a master of industry was an example of what had been done.

Dr. Gardiner expressed the appreciation of the local practitioners of Oxford for the permission to attend the meetings and take part in the discussions. He had not known personally how large mental diseases bulked in medicine at the present day.

LADIES' CLUB ROOM.

The Ladies' Club Room, kindly lent by Messrs. Elliston and Cavell and situated almost opposite the Martyrs' Memorial, was open from 10 a.m. to 12.30 p.m. on Tuesday, Wednesday and Thursday.

GOLF.

The Oxford U.G.C. kindly allowed members of the Association to use the Southfields Golf Course at reduced green fees for both ladies and gentlemen.

SOUTH-EASTERN DIVISION.

The Autumn Meeting of the South-Eastern Division was held at Chiswick House, Moss Lane, Pinner, on Thursday, September 25, 1930, by the courtesy of Dr. Douglas Macaulay.

Present: Drs. N. H. M. Barker, C. W. Bower, L. A. Cholmeley, Sir Cecil Chubb, W. J. Coyne, J. H. Cuthbert, J. H. Earls, R. W. Gilmour, J. H. Glaister, H. G. L. Haynes, G. W. James, W. J. T. Kimber, F. R. King, R. M. Macfarlane, S. E. Martin, H. Crichton Miller, Josphine Miller, D. M. Odlum, J. E. Purves, C. Stanford Read, David Rice, E. Rollins, Noel Sergeant, R. Percy Smith, Geo. Somerville, R. C. Stewart, P. M. Turnbull, and J. R. Whitwell.

During the course of the morning members and guests were shown over Chiswick House and its gardens by Dr. Macaulay and his colleague Dr. Coyne and members of their staff.

They were then entertained to lunch, and after the Royal toast, Dr. Percy Smith proposed Dr. Macaulay's health, and Dr. Macaulay replied.

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The general meeting followed, which was presided over by Dr. Percy Smith.

The minutes of the last meeting, having appeared in the Journal, were taken as read and confirmed.

The date and place of the next meeting were left to be arranged by the Secretary.

Dr. MACAULAY then gave an interesting and amusing account of the many trials and vicissitudes attending his search for "fresh fields and pastures new" necessitated by the falling-in of the lease of the old Chiswick House.

Dr. PERCY SMITH voiced the thanks and appreciation of the meeting for this paper, and members were then taken over to the sister establishment, Grove House, where tea concluded the meeting.

IRISH DIVISION.

THE SUMMER QUARTERLY AND CLINICAL MEETING of the Irish Division was held at the Stewart Institution, Palmerstown, Chapelizod, co. Dublin, on Thursday, July 10, 1930, by the kind invitation of Dr. G. H. Keene, Medical Superintendent.

The following members were present: Dr. R. R. Leeper, in the Chair, Drs. D. E. Allman, P. J. Cassin, F. J. Deane, J. O'Conor Donelan, J. Dunne, W. N. Eustace, John FitzGerald, N. M. FitzGerald, T. Greene, B. F. Honan, J. Kearney, G. H. Keene, E. M. Mahony, J. C. Martin, J. Mills, P. Moran, R. Taylor, and R. Thompson, *Hon. Sec.*

Apologies for unavoidable absence were received from Drs. L. Gavin, D. L. O'Kelly, H. R. C. Rutherford, and J. R. Lord.

The minutes of the last meeting were read, approved, and signed by the Chairman.

At the opening of the meeting, the Chairman referred to Dr. M. J. Nolan, and to the great sorrow which he had recently sustained. He recounted the debt the Association owed to Dr. Nolan, and he asked the meeting to record their sympathy with him in his great loss.

The following nominated candidates were then unanimously elected ordinary members of the Division:

EVELEEN J. O'BRIEN, M.B., B.Ch., N.U.I., D.P.M., R.C.S.Eng., Assistant Medical Officer, Grangegorman Mental Hospital, Dublin.
Proposed by Drs. P. Dwyer, Dr. J. O'Conor Donelan and Stanley Blake.

BERNARD LYONS, M.B., B.Ch., N.U.I., Assistant Medical Officer, District Mental Hospital, Enniscorthy, co. Wexford.
Proposed by Drs. P. Moran, Dr. Hugh T. J. Kennedy and C. B. Molony.

The CHAIRMAN then introduced a discussion on the revised Regulations for the Training and Examination of Candidates for the Certificate of Proficiency in Mental Nursing, and, on the proposal of Dr. MARTIN, seconded by Dr. MILLS, Dr. Laurence Gavin, Medical Superintendent, Mullingar Mental Hospital, was unanimously elected Area Examination Secretary for the whole of Ireland.

The next meeting was fixed for the first Thursday in November, and Dr. J O'Conor Donelan's invitation to hold it at Grangegorman Mental Hospital was accepted with pleasure.

Clinical Meeting.

Dr. KEENE read a paper on "Mongolism," and demonstrated the classical signs and symptoms in a number of very interesting cases, contrasting these with other varieties of amentia.

He said: The true mongol, as I have found him, is an interesting little person as a rule, and owing to his happy and affectionate disposition invariably makes many friends amongst an institution staff. There are several features about the mongol type which tend to invoke one's sympathy. His resistive powers are very low. His life is short. His helplessness is obvious, while his trustfulness resembles closely the blind devotion of a canine friend.

Possibly of all the aments the mongol is the most readily picked out and classified. His physical peculiarities, though sufficiently distinctive in the majority of cases

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to make up a clinical picture which renders diagnosis easy, are not constant. At times one finds some typical sign absent, such as the obliquity of palpebral fissures, a characteristic from which he takes his name.

Mongolism varies much in degree, and, as with other diseases, there appears to be an inverse ratio between the severity of symptoms and the duration of life. Death supervenes at an early date in those of the idiot type. Imbeciles rarely attain to middle life, but the merely weak-minded, I understand, may survive to advanced years.

One of the cases which you will see this afternoon is in her forty-third year, and though an imbecile of low grade enjoys remarkably good health. In my limited experience she represents an exceptional survival.

Taking the imbecile as the more usual type admitted to this Institution, I have in every case found them to be of exceedingly gentle disposition, friendly to a degree, and apparently quite devoid of self-consciousness and shyness. Good-tempered, they are amenable and clean in habits. Observant and highly imitative, one often has hopes that their activities might be directed into some useful channel, but here one meets with disappointment. Those of the imbecile type can often perform a few tricks, such accomplishments being largely due to their gift of imitation. Hopping a ball adroitly, or even skipping may be readily acquired, but when it comes to setting them to any form of useful occupation the result is negligible.

The mongol, as already stated, presents many distinctive characteristics, one or two perhaps being absent in some patient otherwise true to type, and I am led to believe from the case of one little boy, whom I shall show you, that it is possible to find occasionally a mixed type where cretinism apparently co-exists.

The true mongol, however, is unmistakable, and frequently has all, or many of the following characteristics:

(1) A typical brachycephalic head, with high cephalic index, owing to depression of glabella, and flat occiput.

(2) Short, stockily built body, not necessarily deformed. Probably an incomplete umbilical hernia. Erect of carriage, and having active body movements.

(3) Hands and feet relatively broad and clumsy. Abnormally short thumbs and little fingers, the latter much incurved. The cleft between great and second toes is often wide and deep, and this is often more noticeable by reason of the abnormal length of second toe.

(4) The face is flat, with short wide nose, and nostrils looking forward; skin rough, harsh, and often of a reddish tint.

(5) Palpebral fissures set obliquely. Some tendency to epicanthus, and not infrequently a condition of partial ptosis. Almost invariably blepharitis is present in varying degree, with scarcity of lashes, and a speckled condition of the irides is not uncommon.

(6) The ears are usually small and quite well formed, if perhaps a little round.

(7) The tongue is particularly characteristic, being large and deeply fissured in the transverse line, with very much enlarged papillæ.

(8) The teeth and palate I have not found calling for special note.

The mongol is a martyr to chilblains, but, in my experience, I have never known epilepsy to be added to his imperfections.

Dr. Keene's paper gave rise to a lengthy discussion on the ætiology of mongolism, in which the CHAIRMAN, Drs. EUSTACE, O'CONOR DONELAN, GREEN and CASSIN took part. Several of the speakers recorded cases where a mongol child had been born—after other children who were healthy—in close association with a period of stress or marked addiction to alcohol in one or other parent. Dr. KEENE, in replying, reviewed many theories now more or less rejected, and stated that his own opinion was that a peculiar glandular deficiency was the main element in the genesis of this condition. In one of the cases exhibited there was almost certainly an associated degree of cretinism, as the little boy at once became lethargic and stuporose if his daily grain of thyroid was omitted. He recorded the observation that the medulla, pons and cerebellum of these cases were nearly always abnormally small.

Dr. JOHN FITZGERALD read a paper on "The Treatment of Epilepsy," and, following this, Dr. Honan read a critical review of this paper written by Dr. Nolan. Dr. FitzGerald's paper stressed the importance of the patient investigation of each individual case of epilepsy from the point of view of all the possible ætiological

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factors—toxic, reflex and psychic—and the equally patient trial which should be given to the various remedies at our disposal, before assuming that the optimum benefit had been obtained.

Dr. KEENE recalled his association with Dr. John Turner, when the latter was conducting his famous researches into the ætiology of epilepsy and formulating his theory of cortical emboli. It was the consensus of opinion that progress in the treatment of this affection could only be hoped for by such careful work as had been revealed in Dr. FitzGerald's paper.

Dr. HONAN then gave the meeting an account of the recent tour of the Scottish Mental Hospitals. Following Dr. Honan's paper, a lengthy discussion took place on the different modes of treatment at present adopted by the various institutions of these islands. Dr. Moran stressed the importance of open-air treatment on verandahs, which seems to be rapidly extending.

A vote of thanks to Dr. Keene for his kind hospitality was proposed by Dr. Eustace and seconded by the Chairman.

This terminated the proceedings.

UNVEILING OF A BUST OF PINEL AT THE ROYAL HOSPITAL, MORNINGSIDE, EDINBURGH, BY THE FRENCH AMBASSADOR.

As Fate adds grief to grief and pain to pain,
She keeps one bitter potion for the last,
When the mind's self, obscured and overcast,
Combats wild phantoms of the maddened brain.
Yet, through all time, a long and wretched train
Of miserable victims hopeless passed;
While man, the merciless, upon his brother cast
Rude blows and obloquy and galling chain.

Surely the other planets shuddering see
Man's devilry that finds a food for mirth
In minds deranged, or dooms to hideous plight.
All hail, Pinel! whose word rang round the earth
Till Scotia heard, and led in ministry
As the dawn broke upon the dolorous night.

I. B. S. H.

On September 26, His Excellency the French Ambassador, M. A. de Fleuriau unveiled a bust of Philippe Pinel at the Royal Hospital at Morningside to commemorate the centenary of his death.

Prior to the unveiling of the bust, which is placed in a niche in an ornamental gable near the entrance to the West House, a representative gathering numbering 250 met in the splendid lecture theatre of the Jordanburn Hospital. The Earl of Stair presided, and among those present were the Earl and Countess of Cassilis, Sir John Lorne MacLeod, Principal Sir Thomas and Lady Holland, the President of the Royal College of Surgeons and Mrs. Haig Ferguson, Major and Lady Margaret Macrae of Feorlinn, Sir Samuel Chapman, M.P., Prof. Sir Thomas Oliver, Dr. and Mrs. Hamilton Marr, Bailie Given, Prof. and Mrs. Patrick Geddes, Mr. T. M. Gardiner, the Chairman and the Managers of the Hospital, representatives of the Royal College of Physicians and Surgeons, the University of Edinburgh, the General Board of Control and the Royal Infirmary, Superintendents and Matrons of mental hospitals and 100 nurses from the Royal Edinburgh Hospital.

Mr. Gardiner, Chairman of the Board of Managers, welcomed M. de Fleuriau, and said they were gathered to do honour to a very great man, famous in the history of the struggle for the better treatment of mental disease. Few had done so much for suffering humanity as he had when he introduced the humane treatment of the mentally ill.

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Mr. John Richardson, W.S., Secretary of the Board, read the following letter of apology from Dr. René Semelaigne:

"As a great-grand-nephew of Philippe Pinel, I regret exceedingly my inability to be present at the unveiling of his bust in the celebrated town of Edinburgh, one of the first places in Great Britain to take pity upon the lot of the insane.

"In 1792, a few days before William Tuke made his Appeal to the Society of Friends for the erection of The Retreat at York, the President of the Royal College of Physicians of Edinburgh and the Lord Provost of the City proposed the founding of an establishment for the care of the Insane and this was the origin of the Asylum at Morningside. Here, about twelve years after the death of Pinel, the first memorial was erected to his memory.

"To-day we have the good fortune to meet here, as Superintendent, my friend, Prof. George Robertson, the eminent specialist, who is as well versed in French science as in that of his own country. He has always endeavoured to strengthen the bonds of friendship which unite alienists on both sides of the Channel. We cannot forget that he was the first to propose the celebration of the Centenary of the Thesis of Bayle, on account of which he was enthusiastically elected Vice-President of the International Congress on the Study of General Paralysis held in Paris.

"After having taken an active part in the celebration of the centenary of the death of Pinel, at Paris, he is now paying a further tribute to this great philanthropist; and I desire to convey to him, and the Managers of the Hospital, the sincere and affectionate regards and thanks of French psychiatrists."

Letters of apology were also read from Dr. Henri Colin, Secretary of the French Medico-Psychological Association; and from M. J. Euzière, Dean of the Faculty of Medicine at Montpellier (Pinel's medical school), in whose absence the University of Montpellier was represented by Prof. Patrick Geddes.

In the name of the Medical and Nursing Staffs, Prof. Robertson thanked His Excellency for his kindness in coming to unveil the bust of Pinel.

He said that after the termination of the Napoleonic Wars young medical men from Edinburgh University were attracted to Paris by the reputation of the Medical School, then the most famous in the world. Among these young men were Sir Robert Christison, the famous professor of medical jurisprudence, and Dr. Andrew Combe, the physiologist and phrenologist. They attended in 1819 and 1820 the lectures on mental diseases delivered at the Salpêtrière by Esquirol, the friend and pupil of Pinel. They met Pinel in person in the wards of the Hospital and heard from Esquirol about his great reforms.

Twenty years afterwards, in 1838 and 1840, these two men were elected Managers of the Royal Hospital. About this time it was decided to make a large addition to the accommodation, and when the West House was designed, a bust of Pinel was placed over the entrance archway as the keystone of the arch. This was the first memorial to be erected to the memory of Pinel and his work, for the French did not erect a statue till 1885.

That bust of Pinel was now no longer over the entrance, for the old entrance was now the back of the Hospital. The managers accordingly thought it appropriate to commemorate the centenary of Pinel's death by a new bust in a more prominent position, where everyone might see it on entering or leaving the Hospital.

It was sometimes difficult to fix the exact moment that marked the starting-point of a great philanthropic movement. That difficulty, however, did not exist in the case of the introduction of the humane treatment of the insane. By common consent this movement as a practical measure had its beginning in the year 1793, when Philippe Pinel struck off the chains that bound 53 of his patients at the Bicêtre Hospital.

For about ten years certain medical men and philanthropists had been greatly concerned with the deplorable state of the asylums of Paris and by the miserable lot of the insane. During that time, although numerous reports, animated by humane sentiments, had been published, nothing of a practical nature had been accomplished, but at last it was decided that a beginning should be made at Bicêtre, one of the two great asylums of Paris.

The first step to be taken was to select the right man, the man who had the necessary qualifications for acting the part of a reformer. Fortunately two or three members of the Committee of Selection knew Pinel personally and appreciated his worth. He had for ten years interested himself in the treatment of insanity,

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he had written articles advocating humane methods, and he had gained practical experience of these as a Visiting Physician to the private establishment of M. Belhomme, in the rue de Charonne.

He was not ignorant of the abuses that existed at Bicêtre, as he had four years previously inspected the Hospital, and after his appointment he at once approached the National Convention for authority to institute reforms. This they were very reluctant to give as they suspected that the Asylums of Paris concealed Royalists. Couthon was sent to make inquiries, and after seeing a few patients in cells he asked Pinel if he were insane himself to dream of unchaining such wild animals. However, he gave his consent, and in the next few days Pinel liberated from their chains 53 of his patients. This act by common consent marked the definite beginning of the era of the humane treatment of the insane.

It was only right to mention here that Pinel's first and crucial experiment might have proved a disastrous failure, had it not been for the personal knowledge of the patients possessed by Pussin, his head attendant.

The reforms of Pinel did not end with the removal of chains. They included everything that could ameliorate the condition of the insane, such as suitable buildings, warm clothing, good food and the comforts of life. He also introduced careful medical examination of the patients, and one of the first rewards of this practice was the discovery by his pupil Esquirol of the symptoms of general paralysis of the insane—the greatest discovery in mental medicine.

Three years after Pinel had instituted his reforms at Bicêtre, but quite independently of these, the Quakers at York opened an establishment called "The Retreat," which was managed from the beginning on the most humane lines. And when the Royal Edinburgh Hospital, first proposed in 1790 by Dr. Andrew Duncan, President of the Royal College of Physicians, and launched as a public scheme in 1792 by the Lord Provost, was opened for the reception of patients in 1813, it also was conducted from the beginning on the lines laid down by William Tuke at York and by Philippe Pinel in Paris. While Andrew Duncan had the example of Tuke and Pinel before him, he was himself animated by the most humane sentiments. The Royal Hospital at Morningside was founded by him owing to his distress at being unable to treat the poet, Robert Fergusson, the precursor of Robert Burns, in suitable surroundings when suffering from an attack of mania.

To indicate the progress that had been made in the care and nursing of the sick in mind since Pinel first sowed the seeds of reform in 1793, Prof. Robertson quoted a passage from Dr. Charles Singer's *A Short History of Medicine*. "The general care and treatment of the insane has improved out of all knowledge during the last quarter of a century." Progress, instead of slackening in pace, he said, had been more rapid than ever before during the last twenty-five years, and this period had corresponded in particular with the reform known as the "hospitalization of the asylum." Dr. Singer then went on to say, "It is probable that there is now no class of sick person who is more skilfully and considerately cared for." In view of the excellence of our general hospitals for bodily disease, such a statement, Prof. Robertson said, by a responsible authority, who was quite disinterested, was very high praise indeed. It was a national misfortune that these facts were not more generally known by the public. He appealed to the press to disseminate them.

Franco-Scottish Work.

M. de Fleuriau said that gathering was in recognition of the common work of French and Scottish physicians and nurses, all united in a common aim for the treatment of the terrible disease of insanity. For Philippe Pinel's life to be well understood, it must be considered in the light of the position existing in the eighteenth century. He was born in 1745. At that time there were very few schools in the country villages, and generally boys were taught by the parish priest. The Bishop took an interest in Pinel. That was the beginning of his education. He went to Toulouse University, and afterwards to Montpellier. He received a good education, and became a specialist in mathematics before he passed his examination and became a physician. Pinel left the University with the reputation of a very learned and able man. He was a shy man, but a man who had a sort of personal charm, and he exerted a great moral influence over many of the men with whom he came in contact. He came to Paris, and was introduced to one of the great

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DR. HAMILTON C. MARR, MEDICAL COMMISSIONER OF THE GENERAL BOARD OF CONTROL FOR SCOTLAND, PROPOSING A VOTE OF THANKS TO HIS EXCELLENCY, M. DE FLEURIAU, THE FRENCH AMBASSADOR.

From Left to Right.—Mr. T. M. Gardiner, Chairman, Royal Edinburgh Hospital, Morningside; the French Ambassador; Lord Stair, President, Franco-Scottish Society; and Dr. Hamilton C. Marr.

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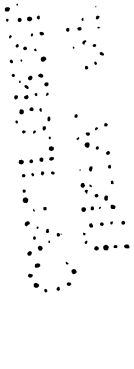

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salons of Paris. There he met many of the men who were playing a part in the great movement out of which came the French Revolution. In that movement was a general desire for the betterment of humanity and for the betterment of conditions in France. Questions of teaching, education, hospitals, and the treatment of the insane—all these were being discussed. Thus, when the Revolution broke out in 1789, a good many solutions of these questions had already been prepared. The French Revolutionary Assemblies did a good deal in all the different departments of public affairs. They helped to put many reforms on the way. The fault of the revolutionaries was sometimes to go too fast. Their desire for immediate results was certainly one of the reasons for all the violence and the terror and the other things by which the French Revolution had been far too much characterized. Not only in Pinel's department, but in many other things the present public life of his country had been formed under the Revolution. Pine had left with them a great reputation for kindness. He lived very long, and very late in life he was one of the most celebrated Professors of the Faculty of Medicine in Paris. He (M. de Fleuriau) was very glad to have set apart some time that day to say how much he respected the memory of Pinel. (Applause.)

The company then adjourned to the courtyard, where M. de Fleuriau unveiled the bust, which was draped with the French and Scottish flags. The bust—a bronze replica of the one in the Academy of Medicine in Paris—has an inscription over it in the following terms: "Philippe Pinel, 1745–1826, to commemorate the centenary of his death."

A wreath was laid under the memorial by Miss Thyne, Lady Superintendent of the Hospital, and, after Dr. Hamilton Marr, Medical Commissioner of the General Board of Control, had proposed a vote of thanks to M. de Fleuriau, the ceremony concluded with Prof. Patrick Geddes reciting some verses he had composed in honour of the occasion.

THE ROYAL EDINBURGH HOSPITAL FOR MENTAL DISORDERS.

A New Nursing Post.

Miss Thyne, S.R.N., R.M.P.N., Lady Superintendent of the West House, Morningside, was, in September, appointed Lady Superintendent of the Royal Edinburgh Hospital for Mental and Nervous Disorders.

The post to which Miss Thyne has been appointed is a new creation. She is the head of the Nursing Staffs, male and female, of both Craig House and the West House, constituting the Royal Edinburgh Hospital for Mental Disorders, now said to be the largest mental hospital in the world for private patients. Under her administration is also the Jordanburn Nerve Hospital, an Out-Patient Clinic and a series of ten Associate Nursing Homes for Nervous and Early Mental Disorders.

THE BOARD OF CONTROL (ENGLAND AND WALES).

Mental Treatment Act, 1930.

The Board of Control, with the approval of the Minister of Health, have appointed a Committee with the following terms of reference:

> "*To consider and advise what principles should be observed in the approval by the Board of Control of medical practitioners for the purposes of Sections* 1 (3) *and* 5 (3) *of the Mental Treatment Act.*"

The Committee is constituted as follows: Sir John Rose Bradford, *K.C.M.G.*, *C.B.*, *C.B.E.*, M.D., F.R.C.P., President of the Royal College of Physicians (Chairman); Sir Hubert Bond, *K.B.E.*, D.Sc., M.D., F.R.C.P., Commissioner of the Board of Control; R. G. Gordon, Esq., D.Sc., M.D., F.R.C.P., British Medical Association; G. W. B. James, Esq., *M.C.*, M.D., D.P.M., Royal Society of Medicine; A. Rotherham, Esq., M.B., Commissioner of the Board of Control; J. S. B. Stopford, Esq., *M.B.E.*, M.D., General Medical Council; R. Worth, Esq., *O.B.E.*,

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M.B., Royal Medico-Psychological Association; with Mr. H. C. Bleakley, of the Board of Control, as Secretary.

Appointment of a Joint Secretary.

The Board of Control, with the approval of the Minister of Health, have appointed Mr. P. Barter, of the Ministry of Health, to be Joint Secretary of the Board.

[*Mr. Barter was Secretary to the Committee on Asylum Administration*, 1921–22; *the Royal Commission on Lunacy and Mental Disorder*, 1924–26; *and the Royal Commission on Local Government*, 1928–29.]

Reconstitution of the Board.

Under the provisions of the Mental Treatment Act, 1930, the Board of Control will be reconstituted, as from January 1, 1931, to consist of the Chairman and four other Senior Commissioners.

Mr. Laurence George Brock, *C.B.*, Chairman of the present Board, will be Chairman of the Board as reconstituted.

The King has been pleased to approve the appointment of the following to be members of the Board:

Mr. Simon John Fraser Macleod, *K.C.*, on the recommendation of the Lord Chancellor; and Sir Charles Hubert Bond, *K.B.E.*, D.Sc., M.D., F.R.C.P., Mr. Arthur Rotherham, M.B., and Mrs. Ellen Pinsent, *C.B.E.*, on the recommendation of the Minister of Health.

BETHLEM ROYAL HOSPITAL; ST. PATRICK'S HOSPITAL, DUBLIN.

Full reports will appear in the January number of the opening of the New Bethlem Royal Hospital, Monk's Orchard, Beckenham, by Her Majesty the Queen; and of the opening of a New Wing at St. Patrick's Hospital, Dublin, by His Excellency, the Governor-General of the Irish Free State.

EDUCATIONAL NOTES.

The Maudsley Hospital, Denmark Hill, S.E. 5 (University of London).—Lectures and practical courses of instruction for a Diploma in Psychological Medicine, Course XIV, 1931:—

Part I (January and February), commencing on January 6, 1931:

I. Twelve lectures on the Physiology of the Nervous System. By F. Golla, F.R.C.P.

Four lectures on Biochemistry in Relation to the Nervous System. By S. A. Mann, D.Sc., F.I.C.

II. Twelve lectures on the Anatomy of the Nervous System. By W. le Gros Clark, D.Sc., F.R.C.S.

Practical Instruction and Demonstrations. Demonstrator: Charles Geary.

III. Eight lectures on Psychology. By Henry Devine, M.D., F.R.C.P., followed by Course of Practical Instruction.

Six lectures on Mental Mechanisms. By Edward Mapother, M.D., F.R.C.P., F.R.C.S.

Four lectures and demonstrations on Physiological Psychology. By F. Golla, F.R.C.P.

Part II (March to May inclusive):

(1) Twelve lectures on Morbid Psychology. By Edward Mapother, M.D., F.R.C.P., F.R.C.S.

(2) Six clinical demonstrations in Psychiatry. By Edward Mapother, M.D., F.R.C.P., F.R.C.S.

(3) Eight lectures on Treatment. Two lectures on General and Routine Treatment; by Sir Hubert Bond, K.B.E., M.D., F.R.C.P. Two lectures on Drug Therapy; by F. Golla, F.R.C.P. Four lectures on Special Therapy; by J. S. Harris, M.D., M.R.C.P., D.P.M.

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(4) Twelve clinical demonstrations in Neurology. By F. Golla, F.R.C.P., and James Collier, M.D., F.R.C.P.

(5) Two demonstrations on Abnormalities of the Fundus Oculi. By R. Foster Moore, M.A., B.Ch., F.R.C.S.

(6) Eight lectures on the Psychoneuroses. By Bernard Hart, M.D., F.R.C.P.

(7) Four lectures on Mental Abnormalities of Children. By William Moodie, M.D., M.R.C.P., D.P.M.

(8) Six lectures on the Practical Aspect of Mental Deficiency. By F. C. Shrubsall, M.D., F.R.C.P.

(9) Four lectures on the Legal Relationships of Insanity. By Sir Hubert Bond, K.B.E., M.D., F.R.C.P.

Six lectures on Crime and Insanity. By W. Norwood East, M.D., M.R.C.P.

(10) Three lectures and demonstrations on Laboratory Methods, including the Examination of the Blood and Cerebro-Spinal Fluid. By S. A. Mann, D.Sc., F.I.C.

Four demonstrations on Pathology of the Central Nervous System. By Charles Geary.

A detailed time-table will be issued later.

Posts as voluntary clinical assistants at the Maudsley Hospital may be granted without fee to practitioners of both sexes specializing in psychological medicine. These appointments can be either for whole or part-time work in wards, out-patient department or laboratories as desired. They can be held in conjunction with attendance at either part of the course for the Diploma in Psychological Medicine. Such an appointment will satisfy the requirements of the various examining bodies in respect of clinical experience of mental disorders for the Diploma in Psychological Medicine; its necessary duration depends on whether it is whole or part time. There are various other opportunities for clinical study, also without fee, to all attending the course. Applications and inquiries regarding these clinical facilities should be made to the Medical Superintendent of the Hospital.

Fees: For the whole course of Parts I and II, £15 15s.; for Part I separately, £10 10s.; for Part II separately, £10 10s.; for one single series of Lectures in Part I, £4 4s.; for one single series of lectures in Part II, £2 2s.; for one single series of demonstrations only, £1 1s.

Inquiries as to lectures, etc., should be addressed to "The Director of the Central Pathological Laboratory," The Maudsley Hospital, Denmark Hill, S.E. 5. The Fellowship of Medicine, 1, Wimpole Street, W., will collect fees from, and issue admission tickets to medical men and women intending to take the course who are introduced by the Fellowship.

OBITUARY.

George L. Wallace, M.D.,

Superintendent of the Wrentham Mental Deficiency Institution (State School), Massachusetts.

We heard with deep regret of the sudden death on July 3 of Dr. Wallace, whom some of us had seen, apparently in the best of health, at the First International Congress on Mental Hygiene, on the Organizing Committee of which he was a prominent member.

Born at West Gore, N.S., in 1872, he attended Baltimore Medical College, from which he graduated with honours in 1898.

After studying for several years under Dr. Fernald (the first prominent physician to make a life study of feeble-mindedness in America), and as an assistant at the Waverley Institute, Dr. Wallace received his appointment to the Wrentham State School, where he served for the last twenty-three years.

He wrote many pamphlets, and was known internationally for his work in the mental hygiene division of medicine.

Massachusetts was proud of Dr. Wallace's work, and the State Hospital Board will find some difficulty in choosing a successor.

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Prof. G. M. Robertson writes:

"Of all the men I met in America, the one who impressed me most on account of his humanity and his grasp of the principles of psychology in dealing with both normal and subnormal people, was Dr. Wallace. Nothing clinical that I have seen has impressed me more than the sight of groups of very defective children engaged in simple manual occupations, which would ultimately lead to useful labour. These children were engaged in digging sand and shifting stones, and hammering nails into wood and taking them out again and such-like occupations; but the feature of the work was that it was done with enthusiasm and enjoyment, and much more like a play or a game than a lesson; and all the while their character was being moulded, and they were developing habits which would become almost instinctive and lead them to be useful citizens. He had grasped the comparative importance of the emotional element and had taken full advantage of it.

"Not only did this apply to the children, but also to their nurses and teachers. Nothing can be more disheartening and exhaust one's patience than the tuition of a backward child. The amount of labour and energy expended in teaching such a child seems to be a waste of time and energy when contrasted with the quickness of apprehension and skill of normal children. But Dr. Wallace kept these defectives in his institution, and after years of patient work was able demonstrate to the staff the excellent results obtained. I saw adult defectives working in the fields as if they were normal labourers. This magnificent result, contrasted with the tragedy that would have happened had this patient instruction not been continued for years, was a continued inspiration and encouragement to his staff. Dr. Wallace grasped all these things and applied them in a manner and with a success I have never seen elsewhere.

"I am very glad of the opportunity I had of meeting this great and wonderful man: his good work and his kindness of heart were appreciated by everyone."

He is survived by his wife, Sarah Forster Wallace, and a son, George Lowney Wallace.

J. R. L.

NOTICES BY THE HONORARY LIBRARIAN.

The following journals are circulated from the Library:

American Journal of Psychiatry.
The Psychological Review.
Journal of Neurology and Psychopathology.
L'Encéphale.
International Journal of Psycho-Analysis.
Journal of Abnormal Psychology.
Mental Hygiene.
Journal of Nervous and Mental Diseases.
Revue Neurologique.
Archives of Neurology and Psychiatry.
Journal of Comparative Psychology.

The following books have recently been added to the Library:

Social Control of the Mentally Deficient. Williams and Davies. 1930.
The Task of Social Hygiene. Havelock Ellis. 1912.
Psychopathology. Nicole. 1930.

Members are requested to return all long-outstanding books to the Library as soon as possible for the purpose of cataloguing.

Members are invited to make gifts to the Library to assist in building up a historical collection of psychiatric works from the seventeenth century onwards. In selecting books for presentation, members are advised to consult the Hon. Librarian as to what books the Library possesses and those it is desirable it should possess.

The new accommodation for the Library at the B.M.A. House is available for use. There is now ample room for the expansion of the Association's collection of books.

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Any communications concerning Books, Journals or Library matters should be addressed "Librarian, Royal Medico-Psychological Association, 19b, Tavistock Square, London, W.C. 1."

NOTICES BY THE REGISTRAR.

Bronze Medal and Prize for 1931.

Dissertations for the Association's Bronze Medal and Prize must be delivered to the Registrar by April 30, 1931.

Divisional Prizes for 1931.

Papers certified as eligible for this competition must be forwarded to the Registrar not later than April 30, 1931.

Gaskell Medal and Prize.

The following Regulation has been rescinded on the authority of the Annual General Meeting (Wakefield), 1928:

"(3) A thesis based on original research, if of sufficient merit, may be accepted by the examiners in place of either the written or the clinical examination or both."

The examination for the Gaskell Medal and Prize and the examination for the Certificate in Psychological Medicine will be held at the Maudsley Hospital, Denmark Hill, London, in May, 1931.

Applications for entry to each examination to be made to the Registrar, St. Andrew's Hospital, Northampton.

There is no fee for entrance to the Gaskell Prize Examination.

The entrance fee for the examination for the Certificate in Psychological Medicine is three guineas.

The Nursing Badge.

This Badge, founded at the Annual Meeting (Wakefield), July 11, 1928, can now be obtained from the Registrar. The application must be made on a special form and accompanied by 6s., which includes the cost of engraving the name and registration number of the holder.

The badge is issued for general use, but especially for occasions when the nursing medal is inconvenient or inappropriate. It is fitted with a brooch-pin for women and a crescent-shaped button-hole stud for men.

For full particulars of the Association's Medals and Prizes and the Certificate in Psychological Medicine see "Year Book" prefacing the January number of the Journal.

NOTICES BY THE GENERAL SECRETARY.

Appointments.

ALEXANDER, D. R., M.R.C.S., L.R.C.P., D.P.M., to be Deputy Medical Superintendent, Colney Hatch Mental Hospital.

BANBURY, P., M.R.C.S., L.R.C.P., D.P.M., to be Medical Superintendent, Ipswich Borough Mental Hospital.

DRURY, K. K., *M.C.*, B.A., M.D.Dubl., D.P.M., to be Medical Superintendent, Leicester and Rutland Mental Hospital, Narborough.

EAST, WILLIAM NORWOOD, M.D., M.R.C.P., to be one of His Majesty's Commissioners of Prisons (England and Wales).

LOGAN, F. C., M.B., Ch.B.Glas., F.R.F.P.S.G., to be Medical Superintendent, Gloucester County Mental Hospitals.

The Maudsley Lecture, 1930.

The 11th Maudsley Lecture by Mr. JUSTICE MCCARDIE will be delivered on Thursday, November 20, 1930, in the Great Hall of the British Medical Association House, 19B, Tavistock Square, London, W. 1. Subject: "Truth." [Academic costume optional.]

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Notices of Meetings.

Quarterly Meetings.—November 20, 1930, at the British Medical Association House, as above. February 25, 1931, at the British Medical Association House.

South-Eastern Division.—Autumn Meeting at Chiswick House, Pinner, September 25, 1930.

South-Western Division.—October 30, 1930, at the Hants County Mental Hospital, Park Prewett, near Basingstoke.

Northern and Midland Division.—October 30, 1930, at Storthes Hall Mental Hospital, Kirkburton, near Huddersfield.

Scottish Division.—December 5, 1930, at the Jordanburn Nerve Hospital, Edinburgh.

Irish Division.—November 6th, 1930, at Portrane Mental Hospitals, Donabate, co. Dublin.

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